

**Professional Development for Middle School Teachers:  
The Power of Academic Choice in the Classroom to  
Improve Stage-Environment Fit for Early Adolescents**

by

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requirements for the degree of Doctor of Education.

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**Abstract**

This study investigates the nature of stage-environment fit for early adolescents in the middle school setting. A review of the literature indicates that despite a long history of reconfigurations and reforms, middle schools are not yet designed to match the unique developmental stage of early adolescence. This mismatch contributes to persistent and predictable declines in achievement when students transition from elementary to middle school. This is an urgent situation, as more than 1.5 million American students are enrolled attend middle schools each year. Research suggests that middle school students need more opportunity and guidance to develop and analyze their own metacognition and exert more autonomy in the classroom to continue prior positive achievement trajectories from elementary school. However, 75% of middle school teachers have not had professional development to address their students' developmental needs (Clark & Clark, 2004). This paper explores how professional development focused on creating more opportunities for student to make academic choices and reflect on those choices within the classroom setting can alter teacher practices to improve stage-environment fit. Based on a case study at one suburban middle school in Maryland, it is expected that this research will have training and practice implications for educators who seek to eliminate the drop in achievement when students transition to middle school.

*Keywords:* middle school, early adolescents, professional development, autonomy, academic choice, reflection, metacognition, stage-environment fit

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## Dissertation Approval Form

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Appendix I: Dissertation Defense Signature Form (February 23, 2017)

**Dedication**

For Christopher, Bethany, and Jack. Thank you for always inspiring me to be the best I can be. Thank you for your patience and support as I work to realize my professional goals of improving teaching and learning to actualize my deeply held belief that *all* children deserve *expert* teachers.

### **Acknowledgments**

This dissertation would not have been possible without the love and support of my grandparents, parents, husband, and children. They supported me throughout my doctoral pursuit, as they do throughout my life.

I would also like to thank the teachers who participated in the intervention. To maintain confidentiality, I cannot acknowledge them by name, but their professional commitment to their students and their own professional growth was demonstrated clearly throughout the intervention.

The cohort of which I have been a part over these last three years in our doctoral program has been invaluable. We have all learned and grown together as professionals, as scholars, and as individuals. I want to particularly acknowledge two colleagues in this esteemed cohort. My former supervisor, mentor, and friend, Robert Dodd is the person who first introduced me to the Johns Hopkins program. Our conversations about our complementary areas of study have yielded insight and information that contributed to the success of my intervention and the completion of my dissertation. In addition, another cohort colleague, Jonathan Garrick, not only supported and commiserated with me along the way, but also served as the second observer for my pre-intervention and post-intervention classroom observations. I cannot imagine having had to accomplish this without them.

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Dr. Heath Morrison. His high standards for work on behalf of students and teachers improved the quality of my work and my own pursuit for excellence. He agreed to join me on this journey even though he had to travel up and down the east coast to do so. My advisor Dr. Henry M. Smith coached, encouraged, and inspired me along the way. His persistent dissatisfaction with mediocrity, combined with his calming and soothing nature, saw me through challenges and stressors and helped me grow throughout this journey of discovery. My executive sponsor, Dr. Darryl Williams, helped me navigate the process and encouraged my perseverance.

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## **EXECUTIVE SUMMARY**

This dissertation explores one possible avenue to eliminate the persistent and predictable decline in student achievement accompanying students' transition to middle school. In examining the literature about early adolescents, defined in this study as students between the ages of 10 and 15, this dissertation elaborates on a mismatch between the developmental needs of students in middle school and the environment in which they are taught. Eccles and colleagues (1989, 1993) defined stage-environment fit as how well the learning environment fits the developmental stages of students, and the literature indicates that middle school students suffer from an exceptionally poor stage-environment fit.

The research reviewed in this dissertation indicates that this unique developmental stage requires time for students to learn to exercise autonomy purposefully and better understand themselves metacognitively. Furthermore, the literature demonstrates that the middle school environment is not typically designed to support students' needs for autonomy and metacognition.

One reason for the mismatch is a lack of targeted, effective professional development (PD) for middle school teachers about the nature and needs of the middle school learner. The student investigator (SI) for this study designed and conducted a mixed methods research study with nine 6<sup>th</sup> grade teachers at a suburban middle school over a period of four months. The design of the study aligned with research presented in this dissertation regarding PD that effected changes in teacher practice. It endured over a period of time, provided time for participant experimentation and collaboration, and

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focused on content that was meaningful for the teachers and the students the teachers taught.

The content of the PD was about providing students with daily choices in instruction. Academic choice (AC) as defined in this study and by Paula Denton (2005), involves the teacher planning different means of accessing and experiencing content as well as demonstrating mastery. The teacher then *frames* those choices for students. Students *plan* how they will complete their choices successfully, then they *work* on their choices. Finally, the teacher provides opportunities for students to *reflect* not only on what they learned, but also on how the choices they made impacted their work. Through this process, students exert autonomy through making choices about their learning and develop metacognitive skills as they learn more about themselves as learners.

This study was designed to examine the impact of this PD on teacher practice. Nine 6<sup>th</sup> grade teachers from one suburban middle school participated. A pretest in the form of pre-intervention classroom observations indicated that no teachers incorporated all aspects of AC into their lessons. A posttest in the form of post-intervention classroom observations showed that 88.9% of teachers in the study incorporated all aspects of AC. Qualitative data were also collected from teachers including their perceptions of the impacts on instruction and on the students, and found that when AC was present, students were more engaged, less off-task, and took more ownership of their learning.

The substantial change in teacher practice coinciding with this intervention may inform educational policy makers about need for changes in PD for middle school teachers. Further examination of AC could positively impact the more than 1.5 million students attending American middle schools each year.

## **CHAPTER 1: UNDERSTANDING THE PROBLEM OF PRACTICE**

### **Academic Choice**

Early adolescence itself speaks to making choices. “Young adolescents face significant turning points. For many youth 10 to 15 years old, early adolescence offers opportunities to choose a path toward a productive and fulfilling life. For many others, it represents their last best chance to avoid a diminished future” (Carnegie Council, 1989, p. 8). This critical developmental stage is characterized by the development of identities including academic identities (Eshel & Kohavi, 2002; Faircloth, 2012; Ohrt, Webster, & De La Garza, 2014). During this period, early adolescents benefit from having opportunity to practice making positive productive choices in the classroom setting. Just as middle school students need to learn advanced math, scientific processes, and critical reading skills, so too do they need to learn how to make good choices. Teachers can provide opportunities for students to make choices in their daily learning and coach them into making choices that work for them.

Early adolescence is also characterized by a newly discovered desire to challenge authority, adults, and the status quo (Hutchinson, 2012, Kellough & Kellough, 2008; Scales, 2012). In examining power, Foucault and Faubion (1994) posited that relationships are fraught with strategies of confrontation and quests for power. Evidence of these confrontations and struggles can be found in the middle school classroom as early adolescents seek their own autonomy. Conversely, when students are provided with choices in their daily learning, teachers offer winning and empowering strategies (Foucault & Faubion, 1994) which may minimize confrontation.

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In this study, the term academic choice (AC) is examined as defined by Paula Denton (2005). That is, for AC to be present in the classroom, teachers must develop choices in the learning and then purposefully *frame* those choices for students to promote informed decision-making. Students then have time to *plan* how they will execute their choices before actually *working* on accomplishing the chosen task. Finally, students have structured opportunities to *reflect* not only about what they have learned, but also on the choices they made and what they discovered about themselves as learners by working on those choices. This literature review lays the foundation for examining why AC is especially responsive to the needs of middle school students and how professional development about AC can alter teacher practice to create a better instructional fit for students, which may lead to advances in student achievement.

### **The Persistent and Predictable Drop in Student Achievement Accompanying the Transition to Middle School**

Despite a history rich with research and reforms, there remains a persistent decrease in achievement when students transition from elementary to middle school (Huss & Eastep, 2011; McEwin, 2001; Rockoff & Lockwood, 2010). The middle school movement began in the mid-1960s in response to poor student performance in junior high schools (Hutchinson, 2012; Gordon, Peterson, Gdula, & Klingbell, 2011). In the 1990s, even after restructuring, students were not excelling as expected, and a myriad of middle school reform efforts were launched (Center for Collaborative Education, 2013; Maryland Middle School Steering Committee, 2008; McEwin, 2001).

Most reform efforts shared common characteristics, including analysis of the early adolescent learner and effective instructional strategies (Carnegie Council on Adolescent Development, 1990; McEwin, 2001; National Middle School Association,

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1995). However, despite reform initiatives, educators have not yet reversed the drop in student performance (Anfara & Lipka, 2003; Anfara & Mertens, 2012). This may well be due to a lack of implementation of the reforms (Andrews & Jackson, 2007; Hutchinson, 2012, McEwin, 2001), since schools that have fully implemented team models and focus more on the student learning as opposed to delivery of content have demonstrated success in increasing achievement for middle school students (Flowers, Mertens, & Mulhall, 1999; Hutchinson, 2012; Rourke & Mero, 2008; Wallace, 2007). Much of the research suggests that the very existence of middle schools with the typical 6-8 or 5-8 grade configurations contribute to the decline in performance (Huss & Eastep, 2011; Rockoff & Lockwood, 2010; West & Schwerdt, 2012). Because of the urgency of the situation, this paper addresses what can be changed within the existing middle school structure, where more than 1.5 million American children are enrolled each year.

### **Study Overview**

This study argues that there is not only a disconnect between middle school students' needs and their learning environments, there is also a disconnect between the professional development (PD) to which middle school teachers have access, as opposed to what they need (Clark & Clark, 2004). The research reviewed in this study demonstrates that middle school teachers need to know more about the developmental characteristics of early adolescents. One component of this profile is that the need for more autonomy and choices in learning is especially acute for this age group to feel empowered and be more engaged (Askill-Williams, Lawson, & Skrzypiec, 2012; Clark & Clark, 2004; NMSA, 1995). Additionally, teachers must keep in mind that early adolescence is a critical time for the development of identity (Carnegie Council on

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Adolescent Development, 1990; NMSA 1995). Positive academic identities can be formed and nurtured when students metacognitively reflect on learning and the choices they make in learning (Askell-Williams et al., 2012; Wang & Holcombe, 2012). This reflection on student-executed choices promotes a metacognitive awareness of learning preferences, strengths, and areas for growth (Denton, 2005).

This study asserts that as teachers increase their knowledge base about these developmental needs, they can better design instruction that contributes to the establishment of a learning environment more fitting to the students they serve. As the literature demonstrates, too many of our middle school students experience a decline in achievement (Huss & Eastep, 2011; McEwin, 2001; Rockoff & Lockwood, 2010). In order to address the persistent decrease in student achievement when students transition to middle school, research suggests these new ideas should be considered.

### **Theoretical Framework**

Stage-environment fit theory (Eccles & Midgley 1989; Eccles et al, 1993) holds that students do better when the environment is suited to their developmental needs, and conversely, there are negative consequences when it is not. Extending the theory of person-environment fit (Caplan, 1987), which holds that individuals are more successful in work and learning when the environment best suits them, stage-environment fit theory links environmental fit to developmental stages (Eccles et al., 1993). Rooted in the sociocultural perspective on learning (Vygotsky, 1978), it relates to opportunity to learn (Gee, 2008), emphasizing that learning is social and dependent on surrounding people and conditions. In the context for this study, the learning environment is defined as actions by the teacher and actions by the student that result from the design and



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implementation of instructional practices. When instructional practices are responsive to the developmental needs of early adolescents, there is a more positive stage-environment fit, and opportunity to learn is increased.

Eccles et al. (1993) found that some changes students faced when transitioning to the middle school environment were actually “developmentally regressive” (Eccles et al, 1993, p. 92). Early adolescence is characterized by turbulent upheaval, contributing to a unique learning profile. Early adolescents thrive in an environment where they have increased autonomy and are able to make sense of their learning and themselves as learners (Eccles & Midgley, 1989; Eccles et al, 1993; Zimmer-Gembeck, 2006).

Unfortunately, most middle schools are not designed to fit this learning profile. The fit between wanting more autonomy and being able to exert autonomy actually decreases as students enter middle school (Eccles et al, 1993; L’Esperance, Lenker, Bullock, Lockamy, & Mason, 2013). The environment in middle school is often driven more by content and performance than by responding to the learner’s needs (Hutchison, 2012; L’Esperance et al., 2013). This poor fit helps to “explain the declines in motivation associated with the transition” (Eccles et al, 1993, p. 92).

Another construct through which to examine this lack of stage-environment fit is the concept of opportunity to learn (Gee, 2008). If the developmental needs of the learner are not considered in designing and sustaining the instructional environment, opportunity to learn is diminished. Whereas, maximizing the fit between instructional practices and student needs increases opportunity to learn. Regardless of the theoretical lens, decreases in performance upon transitioning to middle school are well-documented.

### **Statement of the Problem**

Multiple studies address the middle school achievement decline. According to the 2011 U.S. Census, 1,655,200 students were enrolled in either a 5-8 or 6-8 middle school. Data suggest that most of these students entered high school less prepared than they could have been (Bedard & Do, 2005; Duhey, 2011; Rockoff & Lockwood, 2010; West & Schwerdt, 2012). In New York City, Rockoff and Lockwood (2010) followed 193,071 students over time. Quantitative correlation between achievement and behavioral data found that as compared to peers remaining in K-8 schools, students transitioning to middle school had standardized tests scores that fell by 0.18 and 0.16 standard deviations in math and English respectively (Rockoff & Lockwood, 2010). Using the Florida Department of Education's data warehouse, West and Schwerdt (2012) had similar findings revealing a loss in achievement for students who transitioned to a middle school equating to between a 3.5 and 7-month loss during a 10-month school year (West & Schwerdt, 2012).

Analyzing data from the National Center for Educational Studies, Bedard and Do (2005) discovered that moving to a middle school, as opposed to remaining in a K-8 setting, decreased on-time high school graduation rates by between one and three percent. Likewise, Duhey (2011) examined data from the Ministry of Education in British Columbia, and demonstrated that similarly aged students who transitioned to a middle school experienced a statistically significant decline as opposed to their peers who remained in a K-8 setting, and the negative impact on achievement persisted through high school (Duhey, 2011).

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Students in one suburban school district in Maryland do not escape this loss of achievement. Approximately 80,000 students in grades 3-8, took the Maryland State Assessments in 2014. In reading, the percent of students scoring advanced or proficient increased each of the final three years in elementary school, but upon entering middle school in grade six, those results dropped and continued to decrease (Maryland State Department of Education, 2014). This decrease was even more prevalent for students of color. Given that prior to entering middle school, students in this district had a positive achievement trajectory, the conditions surrounding the middle school learning environment should be examined more closely with an eye toward teacher PD efforts in this area.

### **Review of Literature about the Drop in Middle School Achievement**

This literature review explores stage-environment fit as the basic theory for addressing the loss of achievement in middle school. At the heart of learning, lie the student and the teacher. The learning environment is created by the instructional practices and strategies implemented by the teacher and the interplay between the teacher and the students. Therefore, this literature review first explores the research-based unique needs of early adolescent learners. Next, it examines the research about professional development (PD) opportunities teachers have, or should have, to learn about these student developmental needs in order to build a learning environment that creates an appropriately responsive stage-environment fit.

### **Stage-Environment Fit Challenges in Middle School**

The interplay between students who attend middle school and the institution of middle school itself is riddled with barriers due to a lack of responsiveness to the unique

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profile of the middle school learner (Briggs, Gilligan, Staton & Barron, 2010; Eccles et al, 1993; Ellerbrook & Kiefer, 2013; Ryan & Patrick, 2001). The developmental and learning characteristics of middle school students call for time to explore and develop positive academic identities (Carnegie Council on Adolescent Development, 1990; Eccles et al, 1991; Wang & Holcombe, 2010).

Instead, middle schools are typically driven by a more secondary model of delivering content as opposed to responding to the learners' needs (Ellerbrook & Kiefer, 2013; George, 1993; MacIver & Epstein, 1993; Shoshani & Slone, 2013). This is not surprising, since middle schools are generally modeled after high schools with the traditional goal of preparing students for high school (McEwin, 2001). While some universities, including in Maryland, have endeavored over the last few years to offer more specialization for aspiring middle school teachers (Board of Regents, 2011; Board of Regents, 2013; Board of Regents, 2014; Keller, 2006), there are still few college pre-service programs that are specifically designed to prepare teachers to work in middle schools (College Board Majors and Careers Search, n.d.).

These forces converge to create an issue of stage-environment fit, which presents the need for a change in focus for the middle school teacher. As McEwin (2001) suggests, middle school teachers align with high school teachers, who tend to identify themselves as teachers of Algebra, Chemistry, English Literature or other content disciplines. If instead of considering themselves teachers of subjects, they conceptualize themselves as teachers of early adolescents and purposefully match their instructional practices to the developmental needs of middle school students, a more positive stage-environment fit may result.

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Jacqueline Eccles and collaborators authored seminal works around stage-environment fit in middle schools, arguing that this lack of focus on the developmental needs of students contributed to the decline in academic performance (Eccles, Buchanan, Flanagan, Furling, Midgley, & Yee, 1991; Eccles & Midgley, 1989; Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & MacIver, 1993). As opposed to catering to adolescents' developmental stage, most middle schools are designed to meet the needs of the adults in a content-focused departmentalized secondary model (Hutchison, 2012; L'Esperance et al., 2013).

In her research, Eccles looked at the teaching environment in relation to the developmental stage of the students. Eccles (1993) argued that learning could only be optimized if the instructional practices and environments were responsive to those needs. She further suggested that the developmental needs of early adolescents were notably different from those of younger children or from older adolescents. In one two-year study, Eccles et al. (1993) used data from approximately 1,500 students as part of the 12 school district Michigan Study of Adolescent Life Transitions (MSALT). Findings included that despite students' increased developmental needs for autonomy, opportunities for choices in learning actually decreased from elementary to middle school. This decrease in autonomy did not match early adolescents' needs, resulting in a poor stage-environment fit. Quantitative analysis compared student responses to achievement and school participation and found this mismatch in stage-environment fit decreased students' opportunity to learn, leading to a decrease in student engagement and a lower self-concept of academic strengths (Eccles et al, 1993). This lower self-concept contributed to a less positive academic identity.

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To examine how to improve stage-environment fit, L'Esperance et al. (2013) chronicled middle school reform efforts of a school system in North Carolina, which served 1,941 students in grades 6-8. Qualitative data were gathered from interviews with key stakeholders including the four principals, members of all four leadership teams, and teachers in each middle school. Surveys from teachers, student performance data, and intervention programming data were compiled and analyzed. The learning environments lacked the opportunity for early adolescents to increase independence in their learning and to make connections between what they were learning and themselves as learners. Again, the middle school environment was deemed a poor fit with the needs of the students (L'Esperance et al, 2013).

In an effort to create a more positive stage-environment fit where the instructional practices better meet the needs of early adolescents, the North Carolina school system adopted standards specifically targeted to support middle school students. The primary standard spoke to the unique needs of middle school students. The district made the commitment that all administrators and faculty be explicitly trained to meet those needs (L'Esperance et al, 2013). Results were significant. Over the four years following the implementation of systemic reforms including PD for all administrators and teachers about the learning profiles and strengths of early adolescents, math achievement scores across subgroups increased an average of 15.32 percent, and reading achievement scores increased an average of 16.33 percent (L'Esperance et al, 2013). Strategic, research-based responses enabled educators to implement instructional practices that aligned with the needs of middle school students, and student achievement significantly improved. While specific to just four schools in one district, the ethnographic exploration of

practices that specifically and purposefully addressed the learning needs of early adolescents exposed potential pathways to eliminating the decline in student achievement accompanying the transition to middle school.

### **Developmental Characteristics of Early Adolescents**

Theorists and psychologists including, Flavell (1963), and Piaget (1952, 1960) as well as professional organizations such as the Association for Middle Level Education (2012), and the National Middle School Association (2010) have contributed to the wide acceptance that early adolescence is a distinctive stage of development. Certainly, puberty defines tremendous physical developmental characteristics, but it is also a time characterized by social-emotional, moral, psychological, and intellectual development. These sweeping changes in early adolescence create conditions for drastic education outcomes for students, both positive and negative (Eccles, et al 1993). Therefore, examining the research about the learning needs of the middle school student lays the foundation for developing a more positive stage-environment fit

With all the physical changes, it is to be expected that there are social and emotional implications and repercussions. Early adolescents are preoccupied with peers and how they fit in with respect to their peers (Hutchinson, 2012; Scales, 2010). They are often oversensitive and may overreact when they perceive challenges to their understanding of the social order or embarrassment (Scales, 2010). This developmental stage is characterized by creating distance between themselves and adults and frequent challenges to adult authority. They seek out the opportunity to make their own choices, yet still often return to adults for affirmation (Kellough & Kellough, 2008.) Raphael and

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Burke (2012) found that attending to these social and emotional needs of early adolescents may improve student learning and achievement.

Morally, the early adolescent is focused on social justice (Carnegie Council on Adolescent Development, 1990; Scales, 2010). Just as they challenge adult authority, so too do they challenge the morals and judgment of adults (Scales, 2010). Early adolescents thrive on exploring aspects of social justice and take stances grounded in deeply experienced feelings (Carnegie Council on Adolescent Development, 1990).

Psychologically, early adolescents are consumed with discovering and developing their identities (Brown & Knowles, 2007). Their increased attention to peers impacts their identity development, as they become more attuned to similarities and differences between themselves and others. One component of a person's identity is his or her academic identity. During this developmental stage, the early adolescent is determining if he or she is someone who does well in school. Therefore, this is clearly a critical window of time for middle school teachers to help students develop positive academic identities (Kellough & Kellough, 2008).

Intellectually, early adolescents maintain the curiosity of childhood while developing metacognition and independent thought (Kellough & Kellough, 2008, Scales, 2010). They also become more adept at abstract thinking (Flavell, 2011, Piaget, 1952) and at more critical and higher-level thinking skills such as synthesis and analysis (Manning, 2002). Brighton (2007) found that early adolescents are particularly engaged with critical thinking opportunities about topics they find interesting and relevant.

In key findings, research supports the benefits of changing instructional practices to more intentionally build students' metacognitive skills and offer increased



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opportunities for student autonomy. Academic choice (AC) as defined in this study supports early adolescents' needs to practice and develop responsible autonomy as they learn to make good choices in their learning and to build their metacognition as they reflect on their choices and their learning.

Middle school students who think about their learning and learn about their thinking are more engaged in school, more likely to exert more effort in their class work, and more likely to demonstrate increases in achievement (Askill-Williams, Lawson, & Skrzypiec, 2012; Wang & Holcombe, 2012). Several studies have examined the role metacognition and growth mindset play in engagement. Based on the science behind neuro-plasticity, growth mindset is defined here as an understanding that intelligence is not fixed, but can be increased through effective effort (Hardiman, 2012). A growth mindset is fostered when students have opportunities to metacognitively reflect on their learning, which also increases engagement and a positive academic identity (Denton, 2005; Hutchinson, 2012; Meeus, 2010).

### **Early Adolescents and Metacognitive Skills**

As stated, for students between the ages of 11 and 14, a primary driving force is the desire to determine their own identities and how they fit in the world around them (Hutchinson, 2012; Scales, 2012). As early adolescents exert more autonomy during this developmental stage, they discover more about themselves and form their identities. Meeus et al. (2010) examined the development of identity over time during adolescence. Their longitudinal sample followed 923 emerging adolescents with an average age of 12.4 years and 390 older adolescents with an average age of 16.7 years in the Netherlands. Identity was classified using the U-MICS (Rocetti, Rubini, & Meeus, 2008,

as cited by Meuss et al., 2010), which was a 13-item survey with a five-point Likert scale (1 = *completely untrue* to 5 = *completely true*). While the researchers acknowledged the limitations of self-reported data and potential discrepancies between descriptive terminology, their analysis demonstrated that “identity transition in adolescence seem to be quite decisive” (Meeus et al., 2010, p. 1579).

Similarly, Setoh, Quin, Zhang, and Pomerantz (2015) determined that in the United States a stronger sense of social-self is more acutely defined, despite the finding that in China and the United States students developed a strong sense of self. Setoh et al. (2015) argued that in American cultures, adolescence is characterized as a time of becoming more independent from their parents while being more aware of how they fit in with their peers. Using data from the University of Illinois U.S.-China Adolescent Study, these researchers examined 375 American students and 451 Chinese students in the fall of their seventh grade. To minimize variability, students were selected from schools that were ranked average or above average in middle-class areas in both countries. Data were collected and coded in four waves of 45-minutes sessions over two years. Results indicated a significant difference between Chinese and American students in their identity development in terms of social characteristics. American students’ perceptions of how they got along with others and how others perceived them was especially distinctive from their Chinese peers. This further illustrates the critical role the social setting of school can contribute to identity formation, especially in American culture.

Looking at differences in adolescent identity development among cultures and not between countries, Matthews, Banerjee, and Lauermann (2014) examined the relationship between identity and motivation among African American and Latino early adolescents.

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Citing Erikson (1968) and Harter (2006), these researchers argued that during the transition to middle school “neurological development in adolescent cognition as well as changes in social consciousness play an important role in adolescents’ propensity toward identity construction and making meaning” (Matthews et al., 2014). Therefore, 600 African American and Latino students from the sixth, eighth, and tenth grades were selected for this research to examine the relationship between academic identity and an orientation toward goal mastery. The questionnaire used was an adolescent version of the Motivated Strategies for Learning Questionnaire (MSLP: Pntrich & De Groot, 1990, as cited by Matthews et al., 2014). Belonging, academic self-efficacy, self-regulated learning (SRL), and mastery orientation were assessed. There were significant positive correlations between self-efficacy and SRL, and between self-efficacy and mastery orientation. Matthews et al. (2014) argued that insufficient attention has been paid to the relationship between identity and motivation for African American and Latino middle and high school students.

Critical to supporting student development of positive academic identities is building their metacognitive skills to reflect on themselves as learners (Hardiman, 2012). Academic choice (AC) affords these opportunities when students reflect on the choices they make in their learning and what the consequences of those choices were on their success. Several studies examine the role metacognition and growth mindset play in engagement.

Askell-Williams et al. (2012) examined the relationship between metacognition, engagement, and achievement. Surveys with “items about living and learning at school...and cognitive and metacognitive strategy use” (Askell-Williams et al., 2012, p.

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417) were administered to almost 1,400 seventh, eighth, and ninth grade students in a middle school setting. They also conducted 17 student interviews to probe into responses and verify that students had the same definitions of survey terminology. Quantitative analysis of surveys indicated there was an overall decline in metacognitive awareness as students progressed from grade 7 to grade 9. Qualitative interviews with teachers indicated that as students moved through the middle school grades, there was less emphasis on how students learned and more emphasis on acquiring content. The researchers argued that the “subject-matter focus may be to the detriment of students maintaining and further developing their expertise about cognitive and metacognitive strategies for learning” (Askell-Williams et al., 2012, p. 421).

Additionally, students with higher levels of metacognition were better able to navigate the challenges presented by schoolwork (Askell-Williams et al., 2012). While some data were self-reported, patterns of responses of the almost 1,400 students were consistent. Although grades and non-standardized tests are often viewed as subjective, the results surrounding effort and mastery are aligned with other research regarding metacognition (Sperling, Richmond, Ramsay, and Klapp, 2012; Wang & Holcombe, 2010). This study provides data supporting the premise that metacognitive awareness and a growth mindset shape a positive academic identity and thereby contribute to a positive stage-environment fit. This improved fit promotes student motivation, which may lead to increased performance and achievement. Therefore, improved metacognitive development is a key component toward fitting the environment of the school to the needs of early adolescents.

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Similarly, Wang and Holcombe (2010) used a structural equation modeling (SEM) to examine the links between student engagement and student achievement. Quantitative data collected from 1991 through 2000 from the Maryland Adolescent Development in Context Study and qualitative data from interviews and surveys administered in separate waves measured facets of student engagement. It should be taken into account that student achievement was only measured using grade point average (GPA), regarded as a subjective measure. Nonetheless, there was a positive correlation between students who were more mastery-oriented with higher student achievement as measured by GPA. Mastery-orientation was defined as students being motivated in order to master new skills and content and is reflective of a growth mindset. Results indicated that when students perceived the emphasis being on performance and achievement of goals as opposed to mastery, there was a negative correlation with motivation and achievement (Wang & Holcombe, 2010).

A growth mindset is nurtured with metacognitive awareness and reflection. If students and teachers are metacognitively aware that performance is increased through effort, a greater emphasis is placed on effort, and an environment that provides for higher academic achievement is created. When students analyze their own choices, they are reflecting on the effort they exerted on a particular task. These opportunities promote an understanding that through effective effort they can indeed increase their knowledge, skills, and intelligence, thereby promoting a growth mindset.

### **Early Adolescents and Choice and Autonomy**

One of the many changes experienced developmentally by early adolescents is a newly discovered instinct and courage to challenge authority. Students in middle schools

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question information and reasoning behind rules and tasks (NMSA, 1995).

Accommodating and channeling this unique developmental trait entails empowering students to exert more authority and autonomy in their learning.

Eccles et al. (1991) conducted a large-scale longitudinal study across 12 school districts with approximately 2,300 early adolescents. As a part of this study, parents characterized their daughters according to physical signs of development. The data were standardized for age groups, and correlated with a qualitative analysis of students' desire for more autonomy, choice, and input into their learning. Girls with a higher level of maturation had a stronger desire for autonomy in the classroom. For girls categorized as being further along in puberty, there were more frequent self-reported instances of decreases in self-esteem, decreases in school attendance, and increases in behavior problems. Unfortunately, when asked about the levels of autonomy in middle school compared to their prior experiences in elementary school, both students and teachers indicated there was less opportunity for student choice in the middle school than there had been in elementary school. The researchers argued that their perceived lack of input in the classroom contributed to a poor stage-environment fit and their decline in school engagement and motivation.

Likewise, Crosnoe and Huston (2007) examined how students' perceptions of being agents of their own learning were associated with math course completion. The data source for this research was the National Educational Longitudinal Study (NELS). Random sampling methods selected almost 25,000 students beginning in their eighth grade year from more than 1,000 schools. Personal control was measured based on adolescents self-reporting their level of agreement to statements about control in their

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life. The degree to which students consulted their parents when making decisions was assessed with a separate parent survey. Math course completion was measured by using final high school transcripts. Adolescents with higher more stable senses of personal control successfully completed the most math credits, whereas adolescents identified with the lowest sense of control earned the fewest credits (Crosnoe & Huston, 2007).

Sagan (2010) studied the ability of students to suggest how to make positive changes in their learning environments. In a small middle school in New York, 306 sixth grade students were provided with learning profiles after completing learning style inventories. Interviews were conducted with 134 of those students. Responses were coded, and data were analyzed for frequency. Students suggested changes to their learning environments and teacher practices that differed significantly from the way they were being taught including changes to the physical layout of the room, more opportunities for collaboration, and having more decision-making power. Students had specific input to provide, however, as seen in results from Eccles, et al. (1991), Sagan found that, “as students progress through their academic careers, they first experience flexibility in the form of many choices while learning in the elementary grades; in sharp contrast they find increased structure as they progress through middle school” (Sagan, 2010, p. 217). In elementary school, students had experienced choices in which centers they would go to, which books they would read, and which projects they would undertake to demonstrate learning. Despite a stronger awareness of self and learning needs, students in middle school had less input on day-to-day learning than they did in elementary school (Sagan, 2010), contributing to a poor stage-environment fit.

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Providing more academic choices to students within the classroom setting promotes student autonomy as it empowers students to make decisions about their learning. Paula Denton identified three phases of student engagement in academic choice: *planning*, *working*, and *reflecting* (Denton, 2005). When teachers take that final step with academic choice, and facilitate students' *reflecting* on their choices, students also build their metacognitive awareness of themselves as learners. It is this combination of exerting choice and reflecting on those choices that address early adolescents' needs for both autonomy and metacognition. Understanding that they are agents of their own success, early adolescents are more empowered and motivated to apply effective effort, thereby achieving greater academic success (Denton, 2005; Eccles et al., 1993) contributing to a positive academic identity.

### **Professional Development for Middle School Teachers**

Unfortunately, despite the wealth of research available about how to best teach early adolescents, research suggests that middle school practices are still not aligned with early adolescents' developmental needs, leading to a poor stage-environment fit (Askill-Williams et al., 2012; Eccles et al., 1991; Eccles et al., 1993; Rockoff & Lockwood, 2010). Much of the middle school reform movements did address early adolescent developmental needs. However, there has been a lack of implementation (Andrews & Jackson, 2007; Hutchinson, 2012). This may be due to entrenched institutionalism and isomorphism (Meyer & Rowan, 2006), so typical of the education sector. It is easier to continue to align the practices of the middle school with the high school than to develop a new model.



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One avenue to explore toward a new model is an increase in quality PD opportunities that not only provide effective strategies and instructional practices to meet the needs of this unique developmental stage, but also help the educators understand the nature of the middle school student and why those instructional practices work (Clark & Clark, 2004; Phillips, 2015).

In the aforementioned two-year longitudinal study conducted by Eccles et al, (1993), using data from the Michigan Study of Adolescent and Adult Life Transitions (MSALT), confidence in teaching efficacy was also analyzed. Seventh grade teachers in middle schools self-reported less confidence in their teaching efficacy than did sixth grade teachers in the elementary schools in the same districts. They found that 78 % of students moved to classrooms with low-efficacy teachers upon the transition to middle school. Researchers argued that teachers with lower efficacy demonstrated lower expectations, which resulted in lower achievement for students. They also noted that “most adolescents experience a negative change in their classroom experiences as they make the junior high transition” (Eccles et al, 1993, p. 96).

Clark and Clark (2004) analyzed literature, academic research, and data from the National Staff Development Council to study the state of PD for middle school teachers. They determined that only 25% of middle school teachers had any training regarding the specific needs of young adolescents. They argued that due to the unique developmental needs of middle school students, “the acquisition of specialized middle level education knowledge and skills” (Clark & Clark, 2004, p. 48) was critical for any real school improvement efforts in middle school. With specific training about the needs of middle school students, teachers can become more knowledgeable about the needs and strengths

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of the students they serve. They can be empowered to develop a classroom culture that embraces student autonomy and builds students' reflective skills. Academic choice contributes to this type of positive stage-environment fit. However, teachers need the opportunity to learn why it is a match and how to implement it effectively in the classroom.

Anfara and Mertens (2015) examined research on PD in middle schools especially from the National Middle School Association (NMSA) and from the National Association of Secondary School Principals not just to examine access and participation in PD, but also to recommend content and characteristics of PD. They argued that all PD should align with the needs of student and staff learning. In addition, they suggested that all components address the specific learning needs of early adolescents to ensure that the educators value the unique characteristics of early adolescents and are effectively prepared to teach them (Anfara & Mertens, 2015).

Wilcox and Angelis (2012) took the research a step further to look at how PD impacted student results. Using quantitative regression, they selected ten higher-performing schools as identified by the National Center for Educational Accountability and compared them to six average-performing schools with similar locations, demographics, and school characteristics in New York State. Interviews, observations, and artifact analyses provided data for a qualitative case study examination of the relationship between school characteristics and achievement. Teachers in high-performing schools had more PD programs designed specifically to support middle school student performance (Wilcox & Angelis, 2012). Therefore, additional research is called for to examine how to design PD opportunities to better train teachers about the

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unique needs of middle school students, so that they can become agents for change in increasing opportunities for autonomy and reflection to improve the stage-environment fit for their students and ultimately student achievement.

### **Research Question**

This study more closely examines the qualities of the stage-environment fit in middle school. It further seeks to illuminate the opportunities middle school teachers have to learn more about the developmental needs of early adolescents. The underlying premise is that deeper knowledge about those developmental needs will enable middle school teachers to better match early adolescents' instructional needs. Therefore, this study is guided by the following research question:

*In what ways can professional development about student academic choice in the classroom impact teacher practice to promote a more positive stage-environment fit for early adolescents?*

### **Delimitations and Discussion**

By design, one delimitation in this study is that this dissertation does not address the grade configuration of middle schools, but instead looks at how to improve stage-environment fit within the current middle school structure. Some research indicates that the very transition itself at this critical developmental juncture may contribute to the decline in student performance (Huss & Eastep, 2011; Rockoff & Lockwood, 2010; West and Schwerdt, 2012). However, changes in middle school structure and configuration are beyond the scope of this research. A second delimitation is that this study was designed to only consider changes in teacher practice, so no student data was collected.

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The literature review presented in this study suggests that the achievement decrease in middle school is not due to a lack of understanding the problem nor a dearth of research-based recommendations. Rather, the failure may be a lack of implementation (Andrews & Jackson, 2007; Hutchinson, 2012). “The most important lesson about implementation we have learned...is that successful reform must be comprehensive and integrative” (Felner, Jackson, Kasak, Mulhall, Brand, & Flowers, 1997, p. 40). This study explores how PD about the specific needs of early adolescents may contribute to motivating educators to more fully implement recommended instructional reforms related to the early adolescent student learner.

Even with extensive research on the unique developmental stage that is early adolescence and the learning needs of those students, educators and policy makers remain perplexed by the continuing decline achievement that accompanies the transition to middle school. They are left wondering why it has not yet been corrected (McEwin, 2001). When literature about the needs of early adolescents is examined in relation to research about the PD of those educators who teach them, a possible window into the cause of the continuing challenge is exposed. Formalized certification and teacher preparation programs are oriented toward preparing a teacher for either elementary or secondary education (College Board, n.d.; McEwin, 2001). Despite the fact that the needs of early adolescents are quite distinct, training for those who provide their education is often not (Clark & Clark, 2004; Phillips, 2015).

Research cited in this dissertation explores how important it is to have a positive stage-environment fit for early adolescents. What may also be lacking is a purposeful fit between middle school teachers and their PD opportunities. This type of targeted PD may

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convince teachers of the need to address implementation of middle school reforms with greater urgency and fidelity. If teachers offer greater opportunities for student academic choice and reflection, the reviewed literature indicates that a more positive stage-environment fit may result, which could optimize student learning, performance and ultimately achievement

A needs assessment (Chapter 2) was conducted to examine middle school achievement and PD opportunities for teachers in one suburban school district and how PD focused on these developmental needs might contribute to improving the stage-environment fit for middle school students.

## **CHAPTER 2: A NEEDS ASSESSMENT REPORT**

### **Examining Middle School Achievement and PD Opportunities**

As the literature review demonstrated, “early adolescent years mark the beginning of a downward spiral for some individuals, a spiral that leads some adolescents to academic failure and school dropout” (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & MacIver, 1993, p. 90).

As shown in Chapter 2, stage-environment fit theory holds that students do better when the environment is suited to their developmental needs (Eccles et al, 1993). It is also predictable that there are negative consequences when students do not fit well with their environment. The reviewed literature indicates that this fit is enhanced for early adolescents when there are frequent opportunities to make academic choices and reflect on how those choices worked for them to metacognitively understand themselves as learners. Additionally, inadequate access to targeted teacher training about these developmental needs and instructional strategies may contribute to the poor stage-environment fit.

This needs assessment further explored this problem at one middle school in suburban Maryland. Much of the data cited in the needs assessment was obtained from the county’s website. Rosen (2016) developed a model to maintain confidentiality of school data obtained from a website without naming the website in the study. A similar method is established here. For data retrieved from the school system’s website, it is cited within the text as “System Site” with the year it was retrieved. As Rosen (2016) developed the precedent, the system site does not therefore appear in the references.

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One of the top 20 largest school system in the United States, at the time of the audit, this county had a total of 202 schools including 133 elementary schools, 38 middle schools, 25 high schools, one career and technology center, and five special schools. As reported on the System Site (2016), the district employed 22, 932 people; 12,698 of whom were teachers, 88.4% of those teachers had a masters' degree or equivalent. In addition, the website indicated that 96.8% of core academic classes were taught by teachers who were designated as highly qualified (System Site, 2015).

Using extant student achievement data from one cohort of seventh grade students, the Maryland State Assessment (MSA) demonstrated that the achievement decline characteristic throughout history and throughout the country was indeed present at one particular school considered in this study, which, for the purposes of anonymity, is referred to as Any Middle School (AMS) throughout this dissertation. Figures 1 and 2 present graphs for reading and math student achievement data from AMS. Additionally, the extent to which middle school teachers have access to professional development (PD) around the specific developmental needs of this unique age group was revealed in the results of an audit of PD opportunities available to teachers at the district level. At the time of the audit in the spring of 2015, the district's online professional development system listed 194 courses for employees (System Site, 2015). Data demonstrated that the needs of middle school teachers were not being met. To impact change, this study examines potential avenues to increase middle school teacher efficacy to create a better stage-environment fit replete with opportunities for academic choice including metacognitive reflection.

### **Goals and Objectives of the Needs Assessment**

The purpose of this needs assessment was two-fold. The first reason for conducting the assessment was to analyze student achievement data at AMS to examine the trajectory of achievement when students transition from their elementary schools to AMS. The second was to examine the access AMS teachers had to PD opportunities that addressed the specific autonomy and metacognitive learning needs of early adolescents. Therefore, the two research questions that guided this needs assessment were:

- *In what ways are the characteristic achievement declines associated with the transition to middle school evident at AMS?*
- *In what ways are district-level PD opportunities designed to create a positive stage-environment fit available to AMS teachers?*

### **Methodology**

In order to conduct this needs assessment, the first step was to understand how this decline in achievement presents itself at AMS. To do this, the student investigator (SI) worked with the school's principal and instructional data analyst (IDA) to obtain access to past and present achievement data of the current seventh grade class. The seventh grade class was selected because that group of students took the standardized Maryland State Assessments (MSAs) in reading and math in grades three, four, and five in their respective elementary schools, and then took them again in grade six in the middle school. Because the state of Maryland transitioned to the Partnership for Assessment of Readiness for College and Careers (PARCC) tests in the spring of 2015, the final administration of the reading and math MSAs were in the spring of 2014. Therefore, the sixth grade performance data for the seventh grade class of 2014-2015 was



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among the last available MSA data for students in this school district. The MSA results were selected as they provided the sole continuous standardized measure of achievement over time.

To examine the data, performance scores were extracted for the seventh grade cohort, and records were gathered for each of the prior MSA administrations. Due to mobility of students enrolling in Maryland state schools at different age levels, not all students had MSA data for each of the four test administrations. Averages were calculated for all students who did take the assessments, and percentages of students for whom there was no data were noted.

The second step was to examine how the district supported middle school teacher learning around the needs of middle school students. Courses offered at the district level for PD were qualitatively audited. This school district lists course offerings on their website for all employees on their online catalog. The student investigator (SI) analyzed course offerings based on title, description, and intended audience. In the spring of 2015, 194 courses were listed (System Site, 2015). The SI searched for all courses related to middle school teachers, middle school students, metacognition, and choice and autonomy. When that search failed to yield any results, the SI qualitatively analyzed all course titles, descriptions, and intended audiences.

### **Setting and Study Respondents**

In 2016, AMS served more 925 students in grades 6, 7, and 8. In the spring of 2015, 303 students were enrolled in grade seven. AMS's student body is diverse. At the time of the audit, the largest student population was Latino, comprising 44% of the school population. African American students made up the next largest sub group,

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representing 37% of total students. Eleven percent of students were Asian, and 7% of students were white. At one time or another, close to 75% of students had been designated as eligible for free or reduced meals, while approximately 62 % had that designation while attending AMS. The percentage of students who spoke a language other than English as their primary language was 14%. Among those students for whom English was a second language, many languages were represented, but Spanish was by far the most common. Approximately 9% of students had individualized education plans for special needs (System Site, 2016).

The second data analyzed were course offerings listed in the district's professional development online (PDO) catalog in order to explore access and opportunity to courses around stage-environment fit for middle school students. The catalog lists all course offerings, and is updated when new courses are added. At the time of the audit in the spring of 2015, the catalog listed 194 courses for employees.

### **Variables**

Two variables were examined in this needs assessment. The dependent variable was the trajectory of student achievement as students progressed through elementary school and entered middle school. The independent variable was the access and opportunity to PD for middle school teachers to improve their practice of meeting their students' needs of autonomy and metacognitive reflection to establish a positive stage-environment fit.

In examining student achievement as measured by MSA, the SI consulted with AMS's principal and instructional data analyst. Scores for the MSA were benchmarked by criteria for meeting a *proficient* threshold, or an *advanced* threshold. Those criteria

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varied by grade level and were determined by the state in conjunction with Pearson, the company who created the tests. Students who scored below the benchmark for *proficient* were coded as *basic*. To examine the seventh grade class's performance over time, the SI identified the percent of students in the class who scored proficient or advanced versus the students who scored basic over each of the MSA administrations over the course of four years.

Examining the content of the district courses offered to MCPS teachers was not as straightforward. Original searches of keywords yielded no results. Therefore, the SI read through all course descriptions to isolate courses that were in any way related to the problem of practice. Courses that were designed specifically for middle school teachers were extracted, and the course descriptions were analyzed qualitatively.

### **Data Collection Methods**

The source for the student achievement data was AMS's Strategic Monitoring Tool (SMT), a database the school uses regularly to examine student progress. The SMT is updated approximately monthly. Downloads provided from the county are used to populate the database as are results of in-school performance and support measures. To isolate the scores of the identified seventh grade cohort, the SI collaborated with the school's instructional data analyst to filter for just those students in seventh grade and then calculated percentages of students who scored advanced or proficient, those who scored basic, and those students who had no score for each of the MSA administrations over a four-year span. The process was completed by first looking at reading scores, and then repeated for the math data. These results are displayed in graph form in Figures 1 and 2.

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To examine district support for PD related to promoting a positive stage-environment fit for middle school teachers, the SI reviewed the course offerings on the web-based system catalog. The SI searched courses by the following key terms: *middle school students*, *metacognition*, *choice*, and *autonomy*. There were no results for any of those specific terms. Alternatively, the SI read through all 194 course descriptions, and qualitatively analyzed course titles, descriptions, and intended audience for relevance to the developmental needs of early adolescents, metacognition, choice, and autonomy.

### **Summary of Needs Assessment Results**

A basic summary of the key findings from the quantitative analysis of the student achievement data and a qualitative analysis of the professional development on-line catalog is as follows:

- In reviewing the reading MSA data (Figure 1), patterns of student achievement at AMS strongly reflected the research, demonstrating a positive achievement trajectory throughout elementary school followed by a decrease in achievement when entering middle school.
- While the math MSA data (Figure 2) reflected the research, it was not as perfectly parallel with the research. There was a 4 % drop in the number of students scoring proficient or advanced from fourth to fifth grade while still in the elementary setting.
- Consistent with the research, in math there was an even more significant drop of 8% from the final elementary year (grade 5) to the first year in middle school (grade 6) for students scoring proficient or advanced.

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- Out of 194 courses offered through the district's on-line PD system, only six mentioned "middle school" in their titles, descriptions, or target audiences.
- Of the six courses that even mentioned middle school, none of the descriptions for those courses delineated any PD around the specific needs of middle school students as a population.

### **Reading MSA Data**

When the 2014-2015 seventh grade class of AMS students were in third grade, 64% of them scored in the advanced or proficient range in reading, and 13% were designated as basic (Figure A1). For those same students in fourth grade, the percent of students scoring proficient or advanced increased by 8%, with 72% of students scoring above the proficient criterion, and in fifth grade the percentage continued to grow to 76%. Upon the transition to middle school, the trend was reversed, and there was a loss of two percentage points for the number of students meeting standard. In addition, the number of students performing at the basic level changed from 10% in fifth grade in the elementary setting to 16% in sixth grade in the middle school setting. It should be noted that each year going back toward third grade, the percentage of students with no scores for MSA increased. This was attributed to increased mobility.

### **Math MSA Data**

In looking at the math MSA data (Figure 2), the pattern of student achievement was not as predictable. This cohort of students did see an increase in the percentage of students scoring advanced or proficient from third to fourth grade. In third grade, 62% of students met the criterion, and in fourth grade, 66% of students met standard. However, in fifth grade, while still in the elementary setting, there was a 4% drop in student

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achievement, reverting back to the 62% meeting benchmark that was present in third grade. Additional research would be required to examine the potential causes of this decline, although it is consistent with county patterns for that year, and may be related to changes in the curriculum.

What did align with the research around the predictable drop in achievement when transitioning to middle school was the accelerated rate at which the percentage of students meeting standard on the math section of the MSA dropped upon entering sixth grade. There was an 8% decrease in the number of students scoring in the proficient or advanced range. Only 54% of this group of students scored advanced or proficient that year, which was significantly lower than any of the prior administrations. Other evidence that aligned with the research regarding the loss in achievement was the fact that up until fifth grade, no more than 23% of students had scored in the basic range. However, upon entering middle school 36% of students failed to meet the standard for proficiency and were designated as basic.

### **Professional Development Opportunity Data**

A qualitative analysis of the PD opportunities provided at the district level searching for words, topics, and themes related to early adolescent development needs revealed that only six courses, or 3% of the total, mentioned “middle school” in their titles, description, or target audiences. Four of those six courses were for teachers who taught specific courses in middle school to better understand the curriculum, including Algebra, Math 6, Middle School ESOL, and health classes; none of those six specifically mentioned the needs of middle school students. One of the six was designed to support special education students in middle school who had significant cognitive disabilities.

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The sixth listing was not for a course, but for an informational meeting regarding a University of Maryland partnership for Post-baccalaureate Certificate programs. The two programs were titled “Adolescent Motivation & Adolescent Self and Social Processes” and “Adolescent Cognitive Development and Motivation to Read.” While the descriptions of the certificate programs clearly addressed multiple facets of stage-environment fit for middle school teachers, the catalog listing was solely for one informational meeting about a partnership program to which teachers could voluntarily apply and participate in outside of their professional time and context at their own expense.

In summary, the persistent and predictable drop in student achievement associated with the transition to middle school was present at AMS. Additionally, PD opportunities did not exist at the district level to provide teachers with more knowledge about the unique autonomy and metacognitive needs of middle school students. The literature reviewed in Chapter 1, suggests that providing middle school teachers targeted PD about how AC meets early adolescents’ developmental needs for autonomy and metacognitive could improve the stage-environment fit of the school for the students.

Chapter 3 explores literature supporting the intervention implemented in this research designed to improve stage-environment fit. This improved match between the educational environment and the students increases opportunity to learn (Gee, 2008), which may reverse the predictable performance decline accompanying the transition to middle school at AMS.

### **CHAPTER 3: INTERVENTION LITERATURE REVIEW**

#### **Professional Development about Academic Choice to Promote a Positive Stage-Environment Fit**

Stage-environment fit theory provides the contextual lens through which to view the problem of middle school achievement loss nationally and at that documented in Chapter 2 for AMS. As discussed in Chapters 1, there is a mismatch between the developmental needs of early adolescents and the common instructional practices in middle school. Typically, middle school design and instructional practices are based on secondary models (Maryland Steering Committee, 2008; McEwin, 2001) as opposed to learning needs of early adolescents. Despite young adolescents' increased readiness and desire for autonomy, they experience fewer opportunities to make choices in middle school (Eccles & Roser, 2008).

Furthermore, "middle level education has from its inception been plagued by the fact that few teachers have been prepared for specifically teaching early adolescents. The majority of junior high and middle schools are staffed with personnel with either elementary or secondary preparation" (McEwin, 2001, p. 123). Therefore, if targeted professional development (PD) about the ways Academic Choice (AC) can better meet the needs of early adolescents is provided to middle school teachers, practice may be positively impacted, which may improve stage-environment fit and contribute to eliminating the middle school achievement decline.

#### **The Impact of Professional Development on Changing Teacher Practice**

The working theory of treatment for this study is that *if strategically designed and purposefully delivered, PD can impact changes in teacher practice* (see logic model in Figure 3). A review of the literature suggests that PD can play a significant role toward



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improving instructional pedagogy and effectiveness for middle school teachers. As discussed in Chapter 1, when PD for middle school teachers is focused on the needs of the students, there are positive impacts on achievement (Anfara & Mertens, 2015; Wilcox & Angelis, 2012).

The interplay between students who attend middle school and the institution of middle school itself is riddled with barriers due to a lack of responsiveness to the unique profile of the middle school learner (Briggs et al., 2010; Eccles et. al, 1993; Ellerbrook & Kiefer, 2013; Ryan & Patrick, 2001). The knowledge base of how to best teach early adolescents has evolved with research regarding the social, emotional, and physical developmental characteristics of early adolescents (Maryland State Department of Education, 2008). Because most teacher certification programs focus on either elementary or secondary education, few teachers are specifically trained or prepared to become middle school teachers (McEwin, 2001). According to the College Board (n.d.), in the spring of 2016, there were 1,191 colleges or universities that offered majors in elementary education; 625 schools had majors in high school teaching, and high school teachers often major in their content areas and then go on to get teaching certifications. These numbers highlight the distinction of only 378 colleges and universities across the United States offering majors in becoming a middle school teacher (College Board, n.d.).

Also alarming is the fact that the National Council on Teacher Quality (NCTQ) does not even suggest that middle school teachers receive any specific training about early adolescents (NCTQ, 2011). In their *State Teacher Policy Yearbook* (NCTQ, 2011), Maryland was given an overall assessment of D+, and the only recommendation regarding certification for Maryland middle school teachers was that their subject-matter

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preparation be strengthened (NCTQ, 2011). Even the amount of space in their annual report speaks to the lack of focus on middle school teacher preparation. There are 16 pages devoted to assessing the preparation of elementary school teachers; 16 pages for examining secondary teacher preparation, but only four pages illuminate the status of middle school teacher preparation (NCTQ, 2011). In fact, there seems a dearth of research about middle school and teacher preparation programs that address the developmental needs of students.

The United States Department of Education's *Education and Certification Qualifications of Public Middle Grades Teachers* report (Baldi, Warner-Griffin, & Tadler, 2015) also speaks only to certification by content and makes no mention about any training or preparation regarding teaching strategies that are responsive to early adolescents. In a paper commissioned by the National Council for Accreditation of Teacher (NCATE), Pianta, Hitz, and West (2013) argued that despite a growing body of research about the developmental needs of early adolescents, it is rarely incorporated into teacher preparation or policy (Pianta et al., 2013, p. v). However, research suggests that effective middle school teacher preparation needs to be "developmentally responsive to the diverse needs and characteristics of young adolescent development" (Pianta et al., 2013; Thorton, 2013).

To examine the impact of improved PD around the needs of early adolescents, Susan Edwards (2013) analyzed the middle grades (grades 4-8) certification program at Georgia Regents University (formerly Augusta State University). As an assistant professor there, she reviewed how the curriculum was originally developed and outlined how the university reviewed their teacher preparation program to make adjustments. Data

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were collected from interviews and surveys with focus groups of new teachers and their mentor teachers. Some of the findings were that teachers should work in a professional learning community (PLC) setting; there should be more PD to support managing behaviors specific to early adolescents, and there should be more opportunities to learn how to use data to differentiate instruction. New courses were incorporated including one entitled “MGED 3100: The Nature and Needs of the Middle Grades Learner” (Edwards, 2013, p. 19), which addressed specific developmental and learning characteristics of early adolescents. This is an unusual study because it documents the development of a certification program designed specifically to serve the needs of middle school teachers and their students.

Therefore, the literature demonstrates a frustrating dichotomy in middle school education. There is a lack of PD opportunities that are specifically targeted to the needs of middle school teachers and their students (Anfara & Mertens, 2015; Clark & Clark, 2004; L’Esperance et al, 2013; Wilcox & Angelis, 2012). However, simultaneously, there is emerging research to suggest that this type of PD may present significant opportunities to create meaningful change in the stage-environment fit for early adolescents, which may lead to eliminating the persistent and predictable drop in achievement accompanying the transition to middle school (Edwards, 2013; Pianta et al., 2013; Thorton, 2013).

### **Designing Effective Professional Development**

Targeted PD opportunities are only successful if they are well-designed. Research demonstrates that well-designed teacher learning involves active collaboration and specifically addressese teacher and student needs. Additionally, when it endures over a period of time, allowing for experimentation and exploration of new strategies,

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professional practice is positively impacted (Akiba, 2012; Birman, Desimone, Porter & Garet, 2000; Jenson, Lewis, & Smith, 2002; Shanks, Miller & Rosendale, 2012; Weißenrieder, Roesken-Winter, Schueler, Binner, & Blömeke, 2015).

To examine PD in relation to teacher outcomes, Birman, Desimone, Porter, and Garet (2000) surveyed over 1,000 teachers as a nationally representative probability sample. All respondents had participated in PD offered by the Eisenhower Professional Development Program, funded by the federal government. The researchers also conducted 16 case studies across five different states. The researchers developed a formal causal model based on extensive interviews with teachers about their professional learning experiences. Based on detailed descriptions, they identified three structural features of the PD offerings: form, duration, and participation. Three core features were also isolated: content focus, active learning, and coherence. They found that structural features affected the core features, and the combination of those features impacted the success of PD opportunities in self-reported growth in knowledge, skills, and improved practice of participating teachers. Professional learning was optimized when it was focused on deepening knowledge on how students learned; when participants had the opportunity for active learning, and when there was coherence among the PD opportunities. In addition, the researchers concluded that transformational PD programs are designed with core features that promote the opportunity for collective participation and are conducted over a more significant duration.

Shanks, Miller, and Rosendale (2012) also demonstrated the productive role of collaboration in PD, especially as it related to action research. In this study, pre-service teachers at a mid-western university in their final semester before becoming teachers

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were the participants of this research. While the total population was not discussed in the research report, the actions of two pre-service teachers were elaborated through the lens of a case study approach. The approach was to have pre-service teachers collaborate in action research by collecting data, analyzing data, and reflecting on potential upgrades to teaching practices. In addition, these teacher candidates observed and learned from each other as well as from more experienced teachers. This process aligned with the essentials delineated by the National Association of Professional Development Schools in 2008. Interviews and surveys were conducted with participants as well as with university faculty to determine the effectiveness of this approach. The researchers argued that designing PD with these types of learning opportunities empowered pre-service teachers to adjust the process to accommodate their own goals at their job sites to reflect on and improve their practice. Further, they suggested that PD designed with this type of collaborative action research was equally valuable for more experienced teachers.

The power of collaboration in PD was again amplified by the work of Weißenrieder, Roesken-Winter, Schueler, Binner, and Blömeke, (2015). In this study, researchers measured teacher self-efficacy through two different continuing professional development (CPD) course offerings. One course explicitly incorporated designs to foster a PLC, and the control course did not. There were 61 teachers who participated in the two treatment PLC courses, and 113 who were in the control group courses. Although the study took place among pre-school teachers in Berlin and relied on self-reported data, the survey tool used to measure pre- and post- self-efficacy was adapted from one that had previously been deemed highly reliable from by Schwarzer and Jerusalem in 1999. Conclusions included that purposefully building and sustaining PLCs in CPD courses

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correlated with greater mastery experiences and positive impacts on self-efficacy. The researchers argued that incorporating PLC work into PD held potential for promising results when attempting to bring change to scale.

Collaboration was also a key element identified by Jenson, Lewis, and Smith (2002). Their study investigated the role of PD in the implementation of computer technologies in schools across Canada. Researchers conducted this qualitative study across 30 schools and 18 school districts in five different Canadian provinces. This team of researchers interviewed stakeholders from many different levels of the districts' staff regarding the PD opportunities and effectiveness to build teacher capacity in using technology in the classroom. After months of visits, interviews, PD observations, and documentation, common themes were identified in what made some PD opportunities more successful than others. More successful opportunities had some type of incentive, either financial or time-based; opportunities for teachers to explore and discover learning; flexibility in design and differentiation to respond to different levels of pre-existing knowledge; opportunities for teachers to design implementation plans for their classrooms, and on-going support.

One of the most critical aspects unearthed by Jenson et al., (2002) was the importance of collaboration and emotional intelligence among the leaders of the PD. Participants were more invested and successful at transferring their learning to the classroom setting when anxiety was minimized. They were reassured that it takes time to explore technologies to successfully integrate them into instruction. When participants were able to develop support networks and collaborate with colleagues, learning was better actualized in classroom practices.

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Akiba (2012) studied PD opportunities not only according to structures including collaboration, but also into the content of the courses. Using the situated learning perspective, Akiba examined the social and physical contexts in which these courses took place, arguing that this context had a direct relationship with the final results. Results from the Teachers Opportunity to Learn (TOTL) survey in Missouri among 577 middle school math teachers were used for this research and analysis. The TOTL survey was a dominant component of a mixed-method study lasting over five years to examine PD for middle school teachers in relation to student mathematic achievement. Professional development opportunities were categorized, and the impact of each type along with the content was analyzed. Aligned with research from Birman et al., (2000); Jenson et al., (2002); Shanks et al, (2012), and Weißenrieder, et al., (2015), Akiba (2012) found that when structures are in place for teachers to collaborate and continuously reflect, they are more likely to actively participate in professional learning with a more enduring impact on changing instructional practices. Beyond the importance of collaboration, Akiba (2012) also concluded that it is critical that PD opportunities address the needs of teachers by addressing the needs of their students' knowledge and thinking.

Therefore, research affirms that for PD to be most effective, it should involve active collaboration, specifically address teacher and student needs, endure over a period of time, allow for experimentation and exploration of new strategies, and take place in a PLC setting (Akiba, 2012; Birman, Desimone, Porter & Garet, 2000; Jenson, Lewis, & Smith, 2002; Shanks, Miller & Rosendale, 2012; Weißenrieder, Roesken-Winter, Schueler, Binner, & Blömeke, 2015). Any PD designed to enhance teacher understanding of the benefits of AC would need to incorporate these characteristics to be effective.

### **The Needs of Early Adolescents**

The knowledge base of how to best teach early adolescents has evolved with research regarding the social, emotional, and physical developmental characteristics of early adolescents (Maryland State Department of Education, 2008). During this developmental stage, individuals are predominantly preoccupied with determining their identities – who are they, and how do they fit in with the world (Carnegie Council, 1990; Meeus, Van De Schoot, Keijsers, Schwartz & Branje, 2010). Early adolescents are more motivated when they have more autonomy in their learning (Eccles et al., 1991; Eccles & Roeser, 2008; Crosone & Houston, 2007; Sagan, 2010). When students assert their autonomy and have the opportunity to reflect on the choices they make, they learn more about themselves as learners, which contributes to the development of the academic facet of their identities. Increased opportunities for AC would provide those opportunities for autonomy and reflection.

### **Academic Choice as the Professional Development Focus**

As stated, research indicates that this age is characterized by a desire for greater autonomy and the opportunity to exert one's own choices (Eccles et al., 1991; Eccles & Roeser, 2008; Crosone & Houston, 2007; Sagan, 2010). Purposefully contributing to the development of positive academic identities may then be enhanced by affording early adolescents those choice-making opportunities and providing them with structured ways to reflect on those choices. A growth mindset is nurtured with metacognitive awareness and reflection. If students and teachers are metacognitively aware that performance is increased through effort, a greater emphasis is placed on effort, and an environment that provides for higher academic achievement is created. Therefore, providing more



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academic choice with reflection may promote the building of positive academic identities (Eshel & Kohavi, 2002; Faircloth, 2012; Martin et al., 2003; Ohrt, Webster, & De La Garza, 2014).

Self-regulated learning (SRL) which speaks to autonomy, control, and self-monitoring during the learning process, builds on the social cognitive theory of Bandura (2001). Citing neuroscience from Diamond (1998) and Kolb and Whishaw (1998), Bandura (2001) advocated for human agency and argued that the act of “exploring, manipulating, and influencing the environment” (Bandura, 2001, p. 4) provide meaning and direction. He suggested that for agency to exist, the individual must plan, motivate, regulate, and reflect (Bandura, 2001).

These components of human agency, provide the foundation for Academic Choice (AC) as defined by Paula Denton (2005). As explained in Chapter 1, for the purposes of this study AC is present if *all* of the following conditions are met.

- Students are provided with choices about the content they learn, the process by which they learn, and/or the product they create to demonstrate their learning (teacher *framing* phase).
- After choices are framed for the students, students are able to make their choice and develop a plan to execute that choice (student *planning* phase).
- Next, students have time to work on their choice (student *working* phase).
- Finally, students have the opportunity to think back not only about what they learned, but also to reflect on the choices they made to learn more about themselves as learners (student *reflecting* phase).

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Individuals experience more drastic developmental changes between the ages of 10 and 14 than they do at any other time in their lives except from birth to age four (Center for Collaborative Education, 2003). As supported by the literature reviewed in Chapter 1, one of the many changes experienced by early adolescents is a newly discovered instinct and courage to challenge authority (Eccles et al., 1991; Crosone & Houston, 2007; Sagan, 2010): Students in middle schools question information and reasoning behind rules and tasks (NMSA, 1995), which helps them to develop and understand their own identity and how they fit into the world around them. Accommodating and channeling this unique developmental trait entails empowering students to exert more authority and autonomy in their learning.

Providing more AC to students promotes student autonomy as it empowers students to make decisions about their learning. Differentiation has long been an accepted best practice in teaching of all ages (Tomlinson, 2001). To differentiate instruction, teachers provide multiple paths to mastery in the form of varied opportunities in content, process, and/or product, and the teacher determines which students needed which opportunities (Tomlinson, 2001). This study argues that to align with early adolescents' developmental needs for autonomy and discovering more about themselves as learners that *students* be given the power to determine which paths to mastery they take.

Paula Denton identified three phases of student engagement and participation in academic choice: *planning*, *working*, and *reflecting* (Denton, 2005). Incorporating the step of reflection within the AC process creates structures and opportunities for students to learn from experiences as they build their metacognitive awareness of themselves as learners (Denton, 2005; Hardiman, 2012) and develop their academic identities. As

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discussed in Chapter 2, middle school students who think about their learning and learn about their thinking are more engaged, more likely to exert more effort, and more likely to demonstrate increases in achievement (Askill-Williams, Lawson, & Skrzypiec, 2012; Wang & Holcombe, 2012).

A growth mindset is nurtured with metacognitive awareness and reflections. If students and teachers are metacognitively aware that performance is increased through effort, a greater emphasis is placed on effort, and an environment that provides for higher academic achievement is created. Therefore, providing more AC with reflection may promote the building of positive academic identities (Eshel & Kohavi, 2002; Faircloth, 2012; Martin et al., 2003; Ohrt, Webster, & De La Garza, 2014).

The development of positive academic identities is especially critical for students who have not yet experienced regular academic success. Ohrt et al., (2014) conducted research at two suburban middle schools in the Southwest. The form of the intervention was a Student Success Skills (SSS) curriculum that promoted students' self-regulation, perceived competence of learning, and self-esteem (Ohrt et al., 2014, p. 172). Eighth grade students who did not maintain a C average or above in two or more subjects were invited to participate. Two groups were formed at one school and another at the second with a total of 19 participating students throughout the course of the intervention. Of these 19 students, 78.9% were male, and 21.1% were female; 26.3% were white, 15.8% were African American, 15.8 % were Latino and 42.1% were multi-racial. These students participated in weekly 40-minute SSS sessions over the course of one semester.

In each session, students set goals, assessed process on goals, and reflected on the choices they made and what they learned (Ohrt et al., 2014). These researchers used three

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self-reporting scales for data collection: the Adolescent Self-Regulatory Inventory (ASRI) to measure short- and long-term self-regulatory ability, the Perceived Competency Scale (PSC) to measure students' perceived ability for specific behaviors, and the Rosenberg Self-esteem Scale (RSES) to measure self-esteem. Three repeated-measures ANOVAs were conducted. The first was a pretest, the second a posttest, and subsequently they conducted a follow-up assessment two months after the intervention. Qualitative data were also collected through interviews and observations. Data analysis indicated significant effects for self-regulation and perceived competence, but found no significant effect for self-esteem. After the study, the researchers also examined grade completion and promotion. One student moved out of the district, but of the 18 who remained, all successfully moved on to the ninth grade (Ohrt et al., 2014, p. 175).

Beverly Faircloth (2012) conducted two interventions with students in ninth grade English classes to study the relationship between student identity and learning. One intervention, conducted with 34 students was based on students having the opportunity to select issues for research and to present their findings in the format of their own selection. Surveys, student interviews and weekly observations were used to collect quantitative and qualitative data. An analysis of the data concluded that students were more invested and motivated in active learning as a result of having made autonomous choices.

Faircloth's (2012) second intervention was conducted in the same school with 83 students in remedial English classes, and provides further evidence of the potential for metacognitive awareness to impact student identity and learning. For this intervention, students in the same class had opportunities at least weekly to reflect and write about connections between what they were learning and their own life experiences. Qualitative

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surveys, interviews, classroom observations, and analysis of student work provided the data for the research. While the researcher clearly stated, “it would be inaccurate to suggest that the strategies employed in these classrooms provided a panacea for student engagement” (Faircloth, 2012, p. 190), there was evidence that these reflective exercises positively impacted students’ active participation, increased awareness of what it took to be successful in school, and strengthened students’ feelings of being connected to their learning. In addition, Faircloth documented “an interesting by-product of the semester’s lessons was that many students reported that they had learned about themselves” (Faircloth, 2012, p. 191) as individuals and as learners, reinforcing the concept that opportunities for metacognition influence the development of positive academic identities.

Eshel and Kohavi (2002) investigated the effects on increased perceived student control specifically on achievement in mathematics. Sixth grade students across 14 classrooms in a small town in Israel with a lower socio-economic background were the participants in this study. There were 163 girls and 139 boys between the ages of 12 and 13. Choices in learning were stressed in the form of individualized instruction. Students could select from various learning materials, could determine their own learning pace, and could select from different learning opportunities which could be completed individually or collaboratively with peers. These researchers used a series of pre-tested scales to measure student autonomy. Using Pearson correlations, findings were significant as “all the investigated student attributes were consistently and significantly correlated with mathematics achievement” (Eshel & Kohavi, 2002, p. 12). They therefore posited that teaching students how to develop a greater sense of control and autonomy

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was “essential for helping them to realize their academic potential” (Eshel & Kohavi, 2002, p. 21).

Providing more autonomy may be especially critical for some of our most struggling students. Martin et al. (2003) examined an increase in self-determination on eight boys, all of whom were eight or nine years old and all of whom demonstrated severe emotional and/or behavioral problems. In this investigation, each participating student completed self-determination contracts with four different components: plan, work, evaluate, and adjust. Each contract was scored with a detailed rubric to evaluate the correspondence between different components of the contracts. An analysis of one-way repeated ANOVAs determined significant effects in the plan and work phases. Additionally, paired sample *t*-tests on the Woodcock-Johnson academic performance assessments pre- and post- intervention demonstrated a significant difference. At the end of the year, all students demonstrated between a one- and two-year increase in language, math, reading, and general knowledge as measured by their psycho-educational assessments. In addition, teachers, observers, and researchers qualitatively noted a decrease in inappropriate social and physical behaviors for all students. In short, researchers determined that empowering students by using self-determination contracts, enabled students to make their own adjustments to their learning, which was associated with increased learning (Martin et al., 2003).

Therefore, an intervention supporting teachers’ ability to increase student autonomy and self-determination, such as PD about AC, could prove beneficial for middle school students across performance and demographic strata.

### **Discussion and Conclusions toward an Intervention**

Literature reviewed for this dissertation documents the persistent and predictable decrease in student achievement that accompanies the transition to middle school. It also documents the lack of middle school teacher preparation and PD opportunities (Clark & Clark, 2004; College Board, n.d.). Multiple studies indicate that eliminating middle schools altogether could eliminate the achievement loss (Bedard & Do 2005; Duhey, 2013; Rockoff & Lockwood, 2010; West & Schwerdt, 2012). Further research indicates that alternative restructuring efforts may also pose avenues to solutions (Flowers et al., 1999; Rourke & Mero, 2008; Wallace, 2007).

However, such drastic changes to middle school structures are not always feasible, nor were they the prevue of the SI for this research. At the heart of learning are the interactions between the students and the teachers. What can be addressed within the context of any middle school is the opportunity for teachers to further their professional knowledge about the early adolescents they teach and the pedagogical skills that better match their students' needs. In the absence of dramatic restructuring, strategic PD that supports teachers in developing more academic choices for students and increased opportunities for students to reflect on those choices and themselves as learners may provide pathways to reversing the middle school achievement decline.

Just as the content for this PD is designed to be responsive to the needs of middle school students, so too must the design of the PD be responsive to the needs of middle school teachers. Therefore, the PD for the intervention conducted for this study was constructed with tenants of PD that have demonstrated effective in the field (Akiba, 2012; Birmanet al., 2000; Jenson et al., 2002; Shanks et al., 2012; Weißenrieder et al.,2015.

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The intervention took place over a full semester, providing multiple opportunities for teacher experimentation. Teachers were part of a PLC, with an emphasis on collaboration and reflection. The literature suggests that with this strategic design, PD about the power of AC with reflection may result in changes in teacher practice to improve stage-environment fit for early adolescents in middle schools. Chapter 4 provides a description of the intervention design and methodology that was aligned with this research about effective PD.



## **CHAPTER 4: INTERVENTION PROCEDURE AND PROGRAM EVALUATION METHODOLOGY**

### **An Intervention to Impact Teacher Practice with AC**

As shown in prior chapters, research affirms that there is indeed a significant problem of practice for professional development (PD) for middle school teachers nationally (Clark & Clark, 2004) and in the school district of AMS (Phillips, 2015). However, there is significant promise in well-designed, and well-led targeted learning opportunities that provide middle school teachers with a stronger knowledge base about how to address the specific needs of early adolescents (Anfara & Mertens, 2015; Wilcox & Angelis, 2012). As discussed in prior chapters Academic Choice (AC) as defined in this study meets early adolescents' needs for autonomy and metacognition. Meeting these needs may improve stage-environment fit and therefore student motivation and engagement, which also meets middle school teachers' needs.

To respond to the research about effective PD, the design of the learning opportunities in this intervention addressed the needs of the students the teachers served, endured over a period of time, and allowed for collaboration and reflection (Akiba, 2012; Birman et al., 2000; Jenson et al., 2002; Shanks et al., 2012). This intervention involved nine 6<sup>th</sup> grade teachers at a middle school, identified as Any Middle School (AMS) in suburban Maryland. Participants participated in an initial PD overview of the power of AC to meet early adolescent needs. Subsequently they participated in three monthly follow-up PD sessions designed to learn more about how to plan for and deliver instruction incorporating all aspects of AC including reflection. Professional development sessions were conducted in conjunction with classroom observations, coaching conversations, peer visits, and collegial sharing of plans, results, and reflections during

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the sessions, and in an on-line forum. Pre- and post-intervention quantitative data from classroom observations were collected to be triangulated with qualitative data to support and further explain results (Creswell & Plano Clark, 2011).

A variety of outcomes were expected. Short term desired results were to effect changes in teacher practices through PD to create a stronger stage-environment fit, where instructional practices included more opportunities for student choices and reflection to better match the developmental stage of early adolescence. It was anticipated that these changes would also positively impact teacher self-efficacy. Medium term outcomes involved the development of an ongoing professional learning community (PLC), which might endure beyond the time frame of the intervention, and an overall increase in student engagement. Ultimately, in the long term, this intervention was designed to contribute to the elimination of the decrease in performance associated with the transition to middle school.

### **Method**

This study was a mixed methods design to examine the impact of PD about AC on the quality and quantity of AC opportunities presented in participating teachers' classrooms. Quantitatively, the hypothesis was as follows: as a result of semester-long PD about early adolescent needs and academic choice, there will be a significant increase in the amount of academic choice offered in participating teachers' classrooms as measured by a repeated measure *t*-test, pre- and post-intervention using a common classroom observation tool (see the logic model in Figure 3).

The study was enhanced by triangulating this quantitative data with converging qualitative data (Yin, 2016) regarding how the AC opportunities were planned for,

presented, and conducted by teachers and how they were reflected upon by students. Due to the lack of a randomized sample, this investigation was a quasi-experimental one-group pretest-posttest design (Shadish, Cook & Campbell, 2002). To increase the power, an element of interrupted time-series design was incorporated (Shadish et al., 2002). The same classroom observation tool used to collect pretest and posttest data was also used midway through the intervention to provide additional data and as the basis for coaching conversations with each participant. Therefore, it was possible to have another quantitative measure to compare to the pre- and post-intervention states.

Qualitatively, the research had aspects of both the case study and action research approaches (Yin, 2016). To collect and analyze meaningful qualitative data, the study was designed with “methodic-ness” (Yin, 2016, p. 14) adhering to an orderly set of procedures, while still being open to allow for unanticipated outcomes and events.

Multiple sources of qualitative data including interviews, classroom observations, participant surveys, and the analysis of artifacts, strengthened the credibility of the study (Yin, 2016). For the qualitative data gathered, emergent coding (Yin, 2006) systems were used. The SI read all on-line comments and documents posted by participants. For each PD session, the SI identified and highlighted comments and examples from artifacts and surveys, which appear in Chapter 5 as highlights of findings. The SI also recorded verbatim notes during the interviews, which took place during the individual coaching conversations accompanying the mid-intervention classroom observations. For these data, an emergent coding (Yin, 2006) process was used. The SI read each comment by each participant to look for patterns and relationships. In reviewing the overarching content of each participants’ stated goals, three categories were uncovered. Using an emergent

coding system was appropriate for the small sample size (Yin, 2006) and allowed for unanticipated patterns to emerge and be noted. Three categories were uncovered: developing standard choices, improving the framing of the lessons, and incorporating more choices with purposeful technology. The emergent coding system was an appropriate approach as pre-determined codes could not capture nuanced understandings on the implementation of academic choice. Although it could have been anticipated that participants may have wanted to focus on improving the framing of their choices or establishing standard choices that could be used in multiple settings and situations, the SI did not anticipate emergent codes regarding the need to be strategic about developing more academic choices which purposefully incorporated technology. Specific findings are detailed in Chapter 5 in the Mid-Intervention Observations and Coaching Conversations section.

Emergent coding (Yin, 2006) was also used to analyze comments for the fourth and final PD session. However, in this instance the researcher relied on the participants to categorize their comments. As such, during the session, participants individually thought about their own perception data related to how AC impacted their students and their instruction. They then recorded each observation on a separate note. Next, participants formed two groups. One group had five members, and the other had four. Working in two separate groups, they were instructed to work collaboratively to sort and self-categorize their written observations. Participants were told to develop their own categories and titles for each category for their collective listed observations. This participant-driven system permitted participants to code their observations based on their own affinity perceptions. These are presented in the results section of Chapter 5 and in Figure 9.

### **Participants**

This study sample included nine 6th grade teachers of core academic subjects at one suburban school in Maryland. For the purposes of this study, core subjects were defined as math, reading, English, science, and world studies. Participants included three male and six female teachers. Three of the teachers were first-year teachers; three teachers were experienced teachers but new to the school, and three teachers taught at the school for at least one year prior to the study. Due to the small nature of the population, randomization was not possible making it a quasi-experimental one-group pretest-posttest design (Shadish et al., 2002).

AMS was selected as it has already had AC as its instructional focus to drive school improvement for the prior (2015-2016) school year. In this school district, each school uses a root cause analysis process to identify one high leverage strategy as a focus to drive school improvement. In the spring of 2014, the AMS leadership team analyzed performance data and student and teacher voice data and determined that the instructional focus should be the planning and implementation of lessons that incorporate AC to contribute to the building of students' academic identities. The academic focus is designed to be a multi-year process. Therefore, the three teachers who were on staff at AMS for the 2015-2016 school year had some preliminary PD about AC. This school was deliberately chosen to support more purposive sampling (Yin, 2016) to tell a more complete story of the power of AC PD. The other six teachers had not had PD specifically about AC prior to the intervention.

Other research elements were designed to assist in compensating for the lack of randomization of the sample. First of all, these PD opportunities were during the

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scheduled teachers' workday, and meeting times were considered part of their assigned duties. In accordance with Instructional Review Board (IRB) procedures, teachers had the right to exclude themselves from the study (see Appendix C), but as it was part of their work assignment, they were still involved in the meetings, so there was no additional time or effort to participate. This helped to eliminate potential bias of volunteers (Shadish et al., 2002), who may be more intrinsically likely to embrace and experiment with academic choice. In addition, teachers who had probationary status due to underperformance would not have been included in the research study in order to lessen variation in teacher effectiveness. However, at the time of the study, none of the core grade six teachers had been identified as underperforming.

Discrimination in individual differences (Lipsey, 1998) was analyzed by looking at potential discrepancies in results between teachers of varying levels of exposure to similar PD opportunities and of years of experience. This was possible since six of the participants were new to the school at the time of the intervention, and therefore did not have the prior exposure of the 2015-2016 academic choice PD. Significant increases for both teachers who participated in the prior year's PD and those who did not, indicated a lack of effect from this moderating variable (Shadish et al., 2002) and assists in strengthening the power of the findings. The pretest-posttest measures also helped to account for potential discrimination in individual differences.

### **Data Measures, Instrumentation and Analysis**

Myriad data were collected, triangulated, and analyzed (see data collection matrix in Figure 4) in order to provide more power to the study and more insight to the pretest and posttest quantitative comparisons.

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**Classroom observations:** Examining changes in teacher practice necessitates seeing teachers in action. Classroom observations were conducted in three phases. The first phase was conducted in September, 2016 prior to the actual start of the intervention and served as the pretest measure. The second phase was conducted in between the second and third PD sessions. In addition to serving as another quantitative data piece, data collected during this second observation served as the foundation for individualized coaching conversations with each participant to further his or her experimentation with AC and the establishment of action steps. The third phase of observations was conducted after the fourth and final PD session and served as the posttest. Reliability (Lipsey, 1998) was enhanced, as the design of the data collection from classroom observations was conducted by two observers who were both been trained on using the same classroom observation tool. This inter-rater reliability was further amplified by the fact that the classroom observation data collection tool had been proven effective, as it had already been used during the 2015-2016 school year at the intervention site (see Appendix A). These quantitative data were analyzed to compare means for evidence of each component of academic choice as well as the overall percentage of lessons where all aspects of AC were present.

**Attendance.** One of the strengths of this intervention was high dosage (Dusenbury, Brannigan, Falco, & Hansen, 2003), as there were a total of four whole group PD sessions, as opposed to the “spray and pray” method of conducting one PD session and hoping change occurs. However, teachers cannot learn from the PD if they are not there to experience it. Attendance was recorded at each of the four PD sessions. The SI maintained a master attendance spreadsheet over the course of the intervention

with de-identified research identification numbers. Only one participant was absent for only one session. The SI conducted a makeup session particularly for that participant.

**Participant-satisfaction.** As this study was aimed at determining if PD about AC can result in change in teacher practice, it was important to measure participants' perceptions of quality of the PD (Dusenbury et al., 2003). If participants did not see value and were not actively engaged in the sessions themselves, this could have mediated the actual impact of the PD. Therefore, after each PD session, participants completed a brief survey to provide respondent validation reducing the potential for misinterpretation of self-reported input and actions (Yin, 2016). Each survey, in the format of a Google Form, had statements about outcome attainment and overall satisfaction. Statements were adopted from a form already in place in the teacher leadership unit of the school district. Participants had the option of indicating that they *strongly agreed*, *agreed*, *disagreed*, or *strongly disagreed* with each statement related to the achievement of PD session outcomes as well as overall quality and satisfaction. In addition to being able to quantitatively analyze these responses, there was a question for open-ended comments, which were qualitatively assessed. These data were also used to inform upgrades to each subsequent PD session. These data were analyzed to determine if intended outcomes of each session were met, and if there may have been any potential participant dissatisfaction with the structure, process, or delivery of the PD that could have mediated the effects.

**Peer visits.** Between the second and third PD sessions, participants had the opportunity to visit each other to observe an AC lesson. Visiting teachers completed a peer visit capture sheet (Appendix B), which was shared with the observed teacher and



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with the SI. In addition to an additional data collection point, this was an additional learning experience in the intervention. Teachers were able to learn from each other as they saw AC lessons implemented and reflected on the learnings and feedback of colleagues. The SI again used emergent coding to analyze these capture sheets to look for insights and patterns into what participants saw when they observed an AC lesson.

**Coaching-conversation protocol.** After the mid-intervention classroom observation, the SI conducted a reflective coaching conversation with each of the participants about the observed lesson and ideas for next steps in refining AC instructional practice. The protocol was not overly scripted to allow for unanticipated participant insight (Yin, 2016), but involved reviewing the data from the observed lesson, the observed teacher sharing his or her input about what was seen, the SI responding to the teacher's input, and the development of an action plan for next steps. Notes were taken during the conversation and action plans were documented. These notes and action plans were examined for patterns and additional insights into participant learning.

**Artifact collection and analysis.** Throughout the intervention, participants had access to a secure Google Classroom. In this on-line site, all articles and learning resources were catalogued for participant reference. In addition, participants posted reflections and artifacts from their experimentation with AC lessons. In addition to serving as collegial resources for the members of the PLC, these artifacts and participant comments, questions, and reflections were qualitatively analyzed to look for patterns using emerging coding as additional evidence of participant learning and changes in teacher practice.

### **Intervention Procedure**

To respond to the research about effective PD, this intervention took place over the course of one semester to provide more time for experimentation, exploration and collaboration (Akiba, 2012; Birman et al., 2000; Jenson et al., 2002; Shanks et al., 2012; Weißenrieder, et al., 2015). In order to measure the impact of this intervention on teacher practice, it must be clear that what was measured was what was intended. Therefore, a working definition of fidelity of implementation in this context was a maximization of the similarities between the intervention-as-designed and the intervention-as-implemented (Nelson, Cordray, Hulleman, Darrow, & Sommer, 2012). In reviewing the logic model for this intervention (Figure 3), fidelity of implementation required that each component be implemented as designed. This entailed that all participants be assigned to the intervention at the same time, and that participants were from the designated population of sixth grade core teachers at AMS. In addition, the SI was involved in each step of the intervention including conducting each of the four PD sessions, to maximize adherence to design (Dusenbury et al., 2003).

After the pre-intervention observations were conducted in September, participants participated in an initial one-hour PD session to present the problem of middle school achievement and an overview of strategies that are responsive to early adolescents' needs. There were two measurable outcomes for this session.

- *Participants will be able to identify two early adolescent developmental needs that are addressed by AC (autonomy and metacognition), and*

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- *Participants will be able to list all the components of a fully-implemented academic choice lesson (teacher framing, student planning, student working, and student reflection).*

During the session, participants read and explored intellectually stimulating research about mind, brain, science learning and the unique developmental needs of middle school students as well as the basic outline of AC lessons. As mentioned, for this and each of the PD sessions, achievement of outcomes was measured by participant learning and satisfaction surveys in Google Forms.

At the second PD session in October, participants shared with colleagues how they experimented with AC and learned more about how to plan for a fully-implemented AC lesson. The measurable outcome for this PD opportunity was:

- *Participants will be able to develop a plan for an upcoming lesson that incorporates framing the academic choices, students planning their academic choice, students working on the academic choice, and students reflecting on the academic choice.*

During this PD session, participants also coordinated the logistics for their peer visits to see each other implementing a lesson with AC.

During the third PD session in November, participants continued to share with colleagues how they experimented with academic choice, and reflected on what else they observed and learned during the peer visit process. They each identified what was going well and challenges they were having. They then collaborated to help each other find solutions to overcome those challenges. The measureable outcome for this session was:

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- *Participants will be able to identify an obstacle to implementing academic choice and at least one solution to overcoming that barrier.*

In October and November, the SI conducted another observation of each participant's classroom using the same Google Form collection tool. In addition to providing additional data about participants' progress with their AC lessons, these observations provided the content for individual coaching conversations with each participant. Following the coaching conversation protocol, the SI collaborated with each participant to provide individual coaching to establish next steps in refining AC instructional practice. The outcome for this component of the PD intervention was:

- *Participants will be able to develop individualized action plans to improve their AC practices.*

The final December PD session provided a reflective opportunity. Participants reflected on what they learned about AC including how to implement as well as how it changed their teaching and the impact they observed on their students. The measurable outcome for this PD session was:

- *Participants will be able to identify at least one way in which academic choice has improved the quality of instruction in their classrooms and at least one impact they have observed on their students.*

After each PD session, in addition to completing the satisfaction/outcome attained survey, participants posted artifacts and evidence of AC to the shared Google Classroom. Participants were able to view each other's artifacts and evidence and provide comments, ask questions, and respond to colleagues' ideas.

### **Design Strengths and Limitations**

As discussed, this intervention had externally imposed limitations constraining the inferences and generalizations that may be drawn. Not only did the small sample size minimize the power to detect effect, but also despite the incorporation of the pretest-post, the absence of a control group limited causality determinations (Shadish et al, 2002). In an ideal experimental situation, the sample size would have been at least 34, randomized, and accompanied by a similarly sized control group. These restrictions suggest that only correlation as opposed to causation may be established (Shadish et al, 2002). However, the way this intervention was designed and conducted encompassed components and strategies to compensate for the otherwise limited design.

Selection in this intervention presented both limitations and strengths. The lack of randomized selection posed limitations, however the fact that participants were not relegated to volunteers having to work beyond the regular demands of their duties contributed to the strength of inference (Shadish et al, 2002), as this eliminated the possibility that participants may have had a prior disposition to want to learn about AC. In addition, the purposive sampling (Yin, 2016) added to the power of the study, as three of participants already had prior PD about AC, and results could be compared to the results from those six participants who were new to the school and therefore not had the prior PD. Another potential threat to validity was attrition (Shadish et al, 2002). While teacher assignments generally do not change within the school year, there is always the possibility that someone could relocate, be promoted, have a medical situation, or have to leave due to other unforeseen circumstances. This was especially noteworthy due to the fact that the intervention extended over four months, and the small sample size meant the

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loss of even one participant would pose a substantial reduction in power. Fortunately, there was no attrition. All nine participants remained in the study throughout the intervention.

Other threats to drawing valid inferences were history and maturation (Shadish et al., 2002). As mentioned, teachers who had been at AMS the prior year already had PD about AC for the 2015-2016 school year. As there was not an observable difference between the results of veteran teachers and teachers new to the school, history did not appear to compromise validity. It is less simple to eliminate the threat of maturation. Results did demonstrate a significant increase for eight out of nine teachers in the implementation of AC lessons. It is possible that time and therefore maturation alone may have impacted this change. However, the wealth of qualitative data indicates that the PD had a strong influence on teacher practices and overall results.

To counteract the underpowered design, strengths were purposefully incorporated to add value and potential causal connections. For example, consistent instrumentation (Shadish et al., 2002) was used for the pretest, posttest, and the mid-way collection of classroom observation data. The fact that this data collection tool (Appendix A) was already established and used at the school over the course of the prior school year added to its validity. In addition, as mentioned, pre- and post- intervention observations were conducted jointly and data was collected simultaneously by two observers to promote inter-rater reliability (Shadish et al., 2002).

Furthermore, the dosage (Dusenbury et al., 2003) and duration of the PD were designed to maximize teacher learning to effect changes in teacher practice. After the introductory PD session during pre-service, teachers participated in three additional PD

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sessions over the course of the semester. Actions were taken to strategically develop a PLC where participants could collaborate, share resources, and reflect on their experimentation and progress during the intervention.

These design elements contributed to the potential of a large enough effect size to be detectable even with this underpowered design. At a walkthrough conducted in the 2015-2016 school year using the same instrumentation, while 51.9% of 29 classrooms visited classrooms had some element of AC, no classrooms (0%) exhibited evidence of all AC components. This result was the same for the pretest in the initial observations of this intervention. That is to say that during the pretest, no classrooms had evidence of all AC components. Since the starting mean was so low, even with this small sample a significant increase and detectable effect size were possible (Lipsey, 1998).

Most importantly, the mixed methods approach to the research design allowed for both inductive and deductive analysis of the triangulated qualitative data (Yin 2016.) In addition, to mediate the imposed limitations of design, multiple qualitative aspects as depicted in the logic model (Figure 3) and data collection matrix (Figure 4), were collected and analyzed to bring more insight and meaning to potential inferences and causal connections to the quantitative data.

For this sample, this intervention demonstrated transformational change to improve the stage-environment fit for middle school students, which could ultimately contribute to reversing the persistent and predictable drop in student achievement when students transition from elementary to middle school. While the limitations of the study may diminish the ability to draw direct causal relationships (Shadish et al., 2002), the deep qualitative analysis over an extended period of time may contribute to analytic

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generalizations and transferability (Yin, 2016), which may provide inferences and implications for other school systems and middle school teachers.



## CHAPTER 5: FINDINGS AND DISCUSSION

### Process of Implementation

After final staffing and scheduling was completed, it was established that nine core teachers at AMS would participate in the intervention. There were actually fewer teachers of core subject areas who had been at AMS during the 2015-2016 school year than had been anticipated. Only three of the nine participants, therefore, had had prior PD about AC. Of the other six participants, one was a first-year teacher, fresh out of graduating from a teaching program. Two participants were first-year teachers who had made career changes. The other three participants were experienced teachers coming from other schools.

### Pre-Intervention Observations (Pre-test)

After securing letters of consent from all participants, pre-intervention observations were conducted on September 20, 2016. Another Johns Hopkins University doctoral student served as the second observer and accompanied the Student Investigator (SI). During each class visit, the SI and second observer both recorded data about the following:

- Was there evidence of academic choice?
- If so was there evidence of each of the four phases of academic choice?
  - Teachers *framing* the academic choices
  - Students *planning* their academic choices
  - Students *working* on academic choices, specifically in content, process, or product
  - Students *reflecting* on their choices

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The SI and second observer met after each observation to discuss what they saw or did not see in each category to promote inter-rater reliability.

### **Session One**

The first session in September set the foundation for understanding why AC is developmentally responsive to student needs. To activate thinking, participants were asked to brainstorm characteristics of the middle school learner. They were instructed to write each characteristic on one sticky square of paper. Participants then read information about early adolescents' developmental needs for autonomy and metacognition. Next participants sorted their characteristics aligning them to metacognition, autonomy, both, or neither. The second portion of the session provided an overview of the four phases of AC: framing, planning, working, and reflecting. Participants completed a survey and posted a summarizer in the online digital community.

The session itself was designed to model AC. For the first portion of the PD session, participants had a choice in process, namely how they accessed the content about early adolescents' developmental needs for autonomy and metacognition. The SI *framed* the choices for the participants. The first choice was to read an article individually on paper on which they could make comments and notations. The SI *framed* this choice for participants who preferred to read individually and enjoyed the tangible nature of reading on paper and making notes. The second choice was to read the same article electronically and be able to make comments and see the simultaneous adding of comments by others who selected this choice. This choice was *framed* as being a good match for participants who preferred to read electronic text and who may want to see what their peers were thinking as they read. The third choice was for participants to sit and read with the SI to

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discuss key points or ask questions. This choice was *framed* as providing an opportunity for people to read together and process externally and orally. Participants *planned* which choice would be best for them and then participated in the *working* phase of AC using the reading method of their choice. At the end of that segment, participants sorted their characteristics according to metacognition and autonomy with peers. Before moving to the second portion of the PD, participants were prompted to *reflect* and assess how their choice helped them to engage in the sorting activity. Therefore, all four phases (framing, planning, working, and reflecting) were demonstrated before the first half of the PD session had concluded.

The second portion of the first PD session focused on the four phases of AC. The SI briefly introduced each of the four phases, and again AC was modeled in the PD delivery. This time, participants had the choice of the content they accessed to learn about the four phases. They could read a document (on paper or online) that was used in the 2015-2016 AMS PD learning progression that outlined each of the four phases. To *frame* this choice, the SI suggested that participants who were not here the prior year may want to read that to be sure they had the same information. The other two choices were slide show presentations created by members of the AMS staff at the end of the 2015-2016 school year to summarize their learning about the four phases of AC. One slide show had been developed by teachers in the math department, and the other had been developed by teachers in the physical education department. These choices were *framed* as interest based. Participants also had the option to view more than one source if time permitted. Participants then *planned* their choice and *worked* on their choice to learn more about the four phases of AC.

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To *reflect* on this portion of the learning, participants posted their thoughts online. There was even a choice for this post. A square, circle, triangle summarizer strategy was used, and participants could elect to post something that squared with their thinking, something that was still circling in their mind, and something that they wanted to change in their practice, since a triangle is the Greek symbol for delta, which also signifies change. Prior to Session #2, participants were asked to post a brief reflection to the online classroom about something new they tried with AC with a few notes about what went well, what challenges they had, and what they might do next time.

### **Session Two**

During the second session, participants had the opportunity to plan a full AC lesson with all four phases. A template (see Appendix D) was provided and an exemplar was shown (see Appendix E). The template was provided electronically, so that participants could adjust it to best meet their needs. For example, some participants decided to offer two choices instead of three. Other participants decided to use the same reflection method for all the choices they offered. Participants planned collaboratively with content-alike peers and consulted with the SI as necessary. After time to plan, participants displayed their plans for each other to see and participants provided comments and feedback to colleagues. This also created the opportunity for each participant to see additional models of AC lesson plans.

After reviewing each other's plans, participants collaborated to coordinate peer visit schedules.

### **Peer Observations**

These peer observations provided yet another opportunity for participants to see AC in action in the classroom. Based on the schedule they created, each participant visited a colleague to see an AC lesson, and each participant was visited by a colleague. Each peer visit lasted 30 minutes, and each participant completed a peer observation capture sheet (see Appendix B). On this capture sheet, each participant made notes about what s/he saw the teacher do to promote academic choice; what the students did as a result, and what changes s/he would make to his or her own teaching practice as a result. Participants provided a copy of their capture sheet to the colleague they visited and a copy to the SI for qualitative data collection and analysis.

### **Mid-Intervention Observations and Coaching Conversations**

At the end of October, the SI conducted an additional round of observations of each teacher. The same data collection tool was used as during the pre-intervention observations. After conducting this second round of observations, the SI conducted one-on-one interviews and coaching sessions with each participant. During these 30-minute interviews, the SI asked the participant to reflect on what went well during the lesson and what challenges there were. The SI also had each participant reflect on how experimentation with AC was progressing in general terms. Finally, each participant set a goal to improve his or her practice with AC instruction and implementation.

### **Session Three**

During the third session, in November, participants again had the opportunity to share successes and challenges with colleagues. First, they spent time debriefing the peer visits. To do so, they completed a protocol called “Saw It, Did It, Noticed It, Ready for

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It.” In this protocol, each participant individually reflected on strategies and ideas that they either saw, tried, noticed, or were ready to try. Then, again to model AC, each participant selected one of those to share with the group.

The key outcome of this session was to identify solutions to obstacles implementing full AC lessons with all four components. To complete this process, the SI led the participants through a “Barriers to Bridges” protocol. Each participant identified an obstacle or “barrier” to fully implemented AC lessons. Then participants met with two different partners to get two different perspectives for potential solutions or “bridges” around those obstacles. Finally, participants identified at least one “bridge” they would build to eliminate the “barrier.”

### **Session Four**

The fourth and final PD session was dedicated to reflecting on their practice and the impact of AC on instruction in the classroom and on the students. Participants identified what they had noticed in their classrooms and in their students when they implemented AC lessons. Similar to the first session, participants wrote each idea on one sticky note. They then worked in groups to categorize their observations. During the first PD session, participants sorted their observations about the middle school learner according to categories established by the SI (metacognition, autonomy, both, neither). In this fourth PD session, participants developed their own categories for the observations they noted, thereby self-coding their responses. After completing the exercise, they then took a gallery walk to review the other groups’ posters.

After participating in the group activity, they had time to individually reflect. Again, this reflection was designed and delivered according to the four phases of

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academic choice. The SI *framed* their choice by indicating they could select the most significant impact on instruction in the classroom or the most significant impact on students and their learning. To *plan* their choices, participants were asked to consider which resonated with them the most. In the *working* phase, participants wrote about the impact of their choice. To *reflect* on their choices, they put a star by the impact they identified as most significant, and then they shared that impact with colleagues. In addition, participants also had the opportunity to reflect on the intervention as a whole and which components were most effective and meaningful. In addition to providing additional qualitative data for this study, this informed the leadership team at AMS, as they designed future PD opportunities for their staff.

### **Post-Intervention Observations (Post-test)**

In early December, the SI, accompanied by the same second observer from the pretest, conducted the final observations for the posttest of the intervention. The same data collection tool was used. This consistency along with the inter-rater reliability (Shadish et al., 2002; Yin, 2016) were designed to promote validity. These data were compared to the pre-intervention observation data to determine if changes had been effected.

### **Findings**

This section of Chapter 5 delineates the quantitative and qualitative findings from the intervention.

#### **Pre-Observation Quantitative Findings**

During the pre-observation, there was some evidence of AC in four of the nine (44% of) observed classrooms. This evidence all fell within the category of students *working* on their academic choices. Two classrooms had evidence of students working on

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choices in content. One classroom had evidence of students working on choices in process and product. One classroom had evidence of students working on choices in content, process, and product. However, there was not any evidence of teachers *framing* choices, students *planning* choices, or students *reflecting* on their choices in any of the classrooms (0%). For an overview of pre-observation data, see Figure 5.

### Findings by PD Session

Data were collected from each PD session. These were in the form of brief surveys, postings to the on-line classroom, and collection of hand written information from participants. A narrative of highlights follows. Tables summarizing findings can be found in identified figures.

**Session one findings.** During the first session, data were collected in two different ways (see Figure 6 for Session one findings). First, participants completed a brief survey to demonstrate mastery of the outcomes and to indicate satisfaction with the PD session. The first outcome of this PD session was for participants to be able to identify two early adolescent developmental needs that are addressed by AC. Eight of the nine (88.9%) specifically stated autonomy and metacognition. The one participant who did not explicitly mention them by name, instead wrote, “Students need to feel that their own needs are being met. They also always need to continue to think about the way they learn,” demonstrating emerging understanding of the content.

The second outcome was for participants to be able to list all the components of a fully-implemented academic choice lesson (teacher *framing*, student *planning*, student *working*, and student *reflection*). Again, eight of the nine (88.9%) of participants correctly identified *framing*, *planning*, *working*, and *reflection*. The participant who did



not instead wrote: “framing, product, process, reflection,” demonstrating incomplete understanding of the content.

Participant satisfaction data was also collected at each PD session. As stated in Chapter 4, this was done to measure participants’ perceptions of quality of the PD (Dusenbury et al., 2003). If participants did not see value and were not actively engaged in the sessions themselves, this could have mediated the actual impact of the PD. For PD Session #1, six out of nine participants (66.7%) indicated that they strongly agreed that the processes used in the PD session were appropriate for achieving the outcomes. Three out of nine participants (33.3%) agreed. No participants (0%) indicated that they disagreed or strongly disagreed that the processes were appropriate for achieving the intended outcomes. The second participant satisfaction data question was about participation. The second statement was, “The processes used today allowed me to participate fully in discussions and activities.” For this statement, four participants (44.4%) strongly agreed; five participants (55.6%) agreed, and no participants (0%) disagreed or strongly disagreed.

In addition, participants were asked to post a brief reflection about their experimentation between the first and second sessions. The chief question was, “Describe one aspect of academic choice you implemented between PD Session #1 and PD Session #2.” Participants were further asked to note what went well, what challenges were presented, and what they might do the same or differently in subsequent lessons. All responses were read, and highlights of participant comments follow.

*Highlights from session one assignment.* One participant indicated that she had offered choice in product. Students had a chance to work in different contents by

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selecting one article from eight options. This participant indicated that students were not only more engaged in interacting with the article, but were excited to share what they had learned with peers. A challenge that was highlighted by this participant was that because the articles were at varying levels of difficulty and students were able to select the articles they wanted to read, some of the chosen articles did not match students' instructional reading levels. To combat this in the future, the participant suggested more explicit explanations of the articles and their levels of difficulty when framing the choices for students.

In another case, a participant shared that students had a choice in product. At the culmination of a lesson, students were allowed to demonstrate mastery through writing a short paragraph with five to seven sentences, or they could draw a cartoon that had at least five pictures with captions for each. This participant indicated satisfaction with the quality of products from both choices. A challenge was that many students were confused about the assignment. Many students thought that they needed to complete both assignments, and did not understand that they had a choice. The participant indicated that in the future more time should be spent on teacher *framing* and explaining.

A third participant offered choices in homework. Students could apply what they had learned to three different scenarios. This participant indicated that she had selected this venue for providing choice, after experiencing frustration with lack of homework completion. In this case, the *framing* of the choices was noted as an aspect that went well. The participant indicated that students actually were excited about doing their homework. The teacher saw an increase in homework completion, and planned to implement choices in homework more regularly in the future.

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Yet another participant chose to focus on the *reflection* aspect of an AC lesson. After conducting a lesson with choices, students were asked to reflect on how their choices helped them achieve the lesson objective. This teacher described the use of a modeled think aloud and provided students with an example of how to reflect on their choices. One challenge that was reported was that some of the conversations about student reflections veered off-task. To confront that, the teacher decided to have a shorter amount of time for oral processing and incorporate a written reflection to hold all students accountable.

All nine participants shared one aspect of AC with which they experimented. In addition, they were all able to identify at least one positive result of their experimentation as well as a learning to inform future instructional planning and decisions.

**Session two findings.** (See Figure 7 for tables of findings.) The second session focused on being able to plan an AC lesson purposefully including all four phases of AC. Participants were asked to bring curriculum and planning materials to the session. They were provided with a model (Appendix E) and a template (Appendix D) and then provided with time to plan. Participants were told to feel free to adjust the template in any way that best matched their lesson plan for the day as long as there was information about how the teacher would *frame* the choices, and how the students would *plan*, *work*, and *reflect* on their choices. All participants (100%) completed a lesson plan incorporating specific plans for each of the four components of AC.

For participant satisfaction, this time three participants (33.3%) strongly agreed and six participants (66.7%) agreed that the processes used for the PD session facilitated meeting the outcomes. One participant (11.1%) disagreed. The participant who disagreed

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indicated a sense of feeling rushed and unable to complete the entire lesson plan during the PD session. Regarding a sense of the processes facilitating active participation, seven participants strongly agreed, and two participants agreed. No participants (0%) disagreed or strongly disagreed.

During this session, participants also signed up for their peer visits, and all peer visits were completed prior to Session 3. Most striking from the peer visit capture sheets were comments about high or increased student engagement.

*Highlights.* The following are selected quotes from the peer visit capture sheets about student engagement.

- “Students were all engaged. Very little off-task behavior.”
- “Your students have become incredibly engaged and empowered by established routines and expectations. It is obvious that AC is an integral part of your instruction and your students are growing in their academic identity (*sic*).”
- “I saw students were all focusing on their assignments.”
- “Students were very engaged with their work.”
- “Incredible levels of engagement.”

**Session three findings.** (See Figure 8.) During the third session, participants identified barriers to implementing all phases of AC, and colleagues collaborated to identify solutions, or bridges around those obstacles. Participants expressed the second highest levels of satisfaction with this PD session. In relation to completing outcomes, five (55.6%) participants strongly agreed, four (44.4%) agreed, and zero (0%) disagreed or strongly disagreed. In relation to being able to participate fully, seven (77.8%) strongly agreed, two (22.2%) agreed, and zero (0%) disagreed or strongly disagreed.

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*Highlights.* The following are quotes from the open comment section of the satisfaction survey:

- “I liked that the Barriers were immediately dissolved through the process of discussing solutions with our peers.”
- “I loved the brainstorming on problem-solving. Very worthwhile reflective piece.”
- “The time to share barriers and solutions was critical to today's success, because it allowed the workshop to be geared specifically toward the answers we were each individually seeking.”
- “I appreciated talking to various people throughout the time. I also think it was helpful to talk about a real barrier and get ideas on how to fix them (*sic*).”

*Bridges to barriers.* Each participant identified at least one barrier to fully implementing AC lessons with all four components. They then met with two partners (Partner A and Partner B) to exchange ideas on overcoming the obstacle. All participants (100%) left the session with at least one action step to take to eliminate their identified barriers. Some of the identified barriers and bridges follow.

One participant identified that developing standard criteria for success for multiple choices was a challenge. Partner A suggested having a core set of criteria for all choices and then separate columns to allow for differentiated criteria for each of the choices. Partner B suggested having a conversation with students about what makes each choice different. The participant indicated that in the future, there would be one core set of criteria for all the choices in one assignment, and then students would discuss what

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made each choice different or special, and those student-generated comments would be added to the overall expectations.

Another participant shared the challenge of trying to incorporate AC in instruction daily. Partner A suggested gradually adding different types of choices such as drawing or writing the answers to class warm-ups or having three standard reflection questions from which students could select one to answer. Partner B suggested developing a database of videos and articles for each instructional topic. The participant indicated that in the future, choices would be introduced gradually, and choices of videos and articles would be posted in the students' Google Classroom.

A third participant indicated how challenging it was to allocate the time to plan academic choices. Partner A suggested just offering two choices in one area in class each day as opposed to three choices in all areas. Partner B suggested having some standard choices that were not content specific. The participant decided to establish daily options such as coming to a teacher table, working with a peer, or working independently and checking with an answer key.

All nine participants (100%) identified a barrier. All participants (100%) solicited a potential solution from Partner A. Eight out of nine participants (88.9%) received a different solution from Partner B. All participants (100%) identified a step they would take to overcome the barrier.

**Session four findings.** The fourth session was all about reflection. Participants reflected on their practice, the impact of AC on their classroom instruction and on their students, and on the intervention itself. Participants expressed the highest satisfaction ratings for this session. Six participants (66.7%) strongly agreed that the processes for the

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session facilitated attaining the outcomes. Three (33.3%) agreed, and zero (0%) disagreed or strongly disagreed. (See Figure 9.) Eight participants (88.9%) strongly agreed that the processes facilitated their active participation. One participant (11.1) agreed, and zero (0%) disagreed or strongly disagreed.

*Highlights.* Responses in the open-ended comment section of this session included:

- “Truly appreciated the opportunity to reflect and gather our thinking from these PD sessions, the quarter has been very full. Engaging in conversations that work and are areas of growth is also valuable.”
- “Excellent way to wrap up our PD through reflection. I feel very confident moving forward with academic choice and how it will be implemented within our...department.”
- “This session really topped off all the sessions we had. It was good to reflect on all the strategies and new ideas I have for my teaching and my students.”

During this session, participants engaged in a brainstorming and sorting activity similar to the first session. In the first session, participants brainstormed characteristics of the middle school learner and then sorted those characteristics according to if they related to early adolescent developmental needs of metacognition, autonomy, both, or neither. In the fourth session, participants reflected on the impact they had observed on their classroom instruction and their students’ learning as a result of AC. This time, participants worked in two groups to sort their observations according to categories they agreed upon, thereby self-coding their perception data.

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One group of four teachers sorted their observations into three categories: classroom culture, metacognition, and engagement. Samples of observations in the classroom culture category included “increased collaboration,” “more students demonstrating leadership skills,” and “students taking more initiative.” Samples of observations in the metacognition category included “more student generated questioning,” “increased student independence,” and “students are finding their own strengths.” Samples of observations in the engagement category included “students cared more,” “students were more engaged in their own learning,” and “students were more on-task.”

The second group of five teachers also sorted their observations into three categories. They selected ownership, tenacity/investment, and engagement. Samples of observations in the ownership category included “self-advocacy,” and “increased task completion.” Samples in the tenacity/investment category included “students try different ways to achieve a goal,” “students are willing to struggle to master a task,” and “students are more invested.” Samples in the engagement category included “students are more engaged,” “higher engagement,” and “students are more engaged in their work in class and at home.” For a full listing of categories and characteristics, see Figure 9.

### **Mid-Intervention Observation and Conference Findings**

Quantitative data were collected during the mid-intervention observations. All nine (100%) classes visited had some evidence of AC. Six (66.7%) had evidence of the teacher *framing* the choices. Five (55.6%) had evidence of students having the opportunity to *plan* their choices. All nine (100%) provided time for students to *work* on their choices. Four (44.4%) had evidence of students *reflecting* on their work and/or the



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choices they made. Three (33.3%) of the nine participants demonstrated all four phases of AC as compared to zero (0%) in the pre-intervention observation.

Qualitative data were collected during the conferences with each participant. The SI discussed with each participant the strengths and opportunities for growth with AC implementation, and each participant created a goal with action steps. The SI examined all responses without pre-determined categories in an effort to allow for emergent coding (Yin, 2006) as described in Chapter 4. In looking at the overarching content of participants' stated goals, three categories emerged. The most common goal area was about developing standard choices that could be applied to different content areas, with four (44.4%) participants indicating this was the area on which they wanted to focus their continued professional improvement. Three (33.3%) indicated that their goal was around more purposefully framing the lessons. Two (22.2%) set goals that involved a more strategic use of technology in developing choices for students.

### **Post-Intervention Observation Findings**

After the fourth PD session, the SI and the same second observer who participated in the pre-intervention observations visited each teacher for 30 minutes. Findings were dramatic. Whereas in the pre-intervention observations, zero teachers implemented all four phases of AC, in the post-intervention observations, eight of the nine teachers (88.9%) implemented all four phases during the 30 minute observation. One teacher did not have any evidence of AC in the post-observation intervention lesson, although that teacher did demonstrate all four phases during the mid-intervention observation.

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Overwhelmingly, teachers were more explicit about *framing* the choices they provided, and students were engaged in the process of selecting (*planning*) their choices, *working* on their choices, and *reflecting* on their choices.

*Highlights of Post-Intervention Academic Choice Lessons.* In one reading class, students were developing a mind-map of words they had listed about their chosen research project. The teacher offered three choices. For the first choice, students could use pencil and paper to create a free-hand mind-map. The teacher *framed* this choice by saying, “With this choice, you won’t be limited to computer text or shape structures. This might be a good choice for you if you have clear handwriting and enjoy drawing.” For the second choice, students could create a Google Drawing. To *frame* this choice, the teacher said, “Some of you may be familiar with how Google Drawing works. You may have an idea of what you want your diagram to look like, and Google Drawing may help you stay more organized and clear than writing it out on paper.” For the third choice, students could use a website called Mindup. To *frame* this choice, the teacher said, “This might be a good choice for you if you are good at figuring out new technology. This program helps you a bit with the layout of a diagram. It will also be useful if you are confident with your ability to type.”

The students then had time to *plan*. They made their decision, gathered pencils and paper, or collected a Chromebook, and got to work. Five students elected to use pencil and paper, and the balance of the students got Chromebooks to work either in a Google Drawing or the Mindup program. Students *worked* diligently for 25 minutes. During this *work* time, the teacher circulated and checked in with students asking

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questions and providing suggestions. Students were also able to check in with each other, and they took advantage of that.

At the end of the lesson, the teacher provided students structures to *reflect* with an index card and had the following prompt for an exit card displayed on the screen: “1. Why did you make the choice you did? Be specific. 2. Why is it beneficial to see the relationships of different words and ideas to your main research topic?” With those two questions, students were provided structures to *reflect* on both the choices they made and their learning about mind-maps.

In a science class, students were exploring characteristics of organisms to contribute to their eventually being able to explain the importance of biodiversity in an ecosystem. In this lesson, there were choices in content, process, and product. The teacher took time to *frame* and explain each choice. Then the teacher had the students individually consider each choice and then share reasons they might want to pick each one, thereby included students in the *framing* process. The choice in content was that each student was able to select the organism for his or her assignment. The teacher explained, “The organism can be a mammal, an insect, a reptile, a bird, a plant, or any other living thing. You may want to think about an organism that you know well, or one that you are curious about.” The teacher then showed a video with examples of organisms across all kingdoms to activate student thinking.

To assist students in their *planning*, the teacher then had them complete a graphic organizer about two organisms they might select in order to help them narrow their choice down to one. Once they decided on which organism they wanted to explore (content), students also had an academic choice of which process to use to organize their

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information. Students could create a foldable, cut and paste notes in an electronic journal, or write down the information using pencils and paper. For the product, students could create a presentation on the computer or they could create a poster. Additional options within those choices were provided including drawing pictures or cutting and pasting pictures from magazines or the computer. To review, check for understanding, and further *frame* the choices, the teacher had several students share why they might want to pick one choice over another.

Students were actively engaged in *working* on their choices for 22 minutes. There was purposeful discourse between students, and the teacher circulated, prompting questions and providing guidance and tips to students. At the end of the 22 minutes, students were at various stages of completion. The teacher asked them to display at their desks whatever they had completed to that point. Students then participated in a gallery walk and looked at each other's work. At the end of the gallery walk, the teacher displayed a slide with the following: "Think about your work. How did your choice work for you? Think about your classmates' work that you saw. What did you learn from looking at your classmates' work? What might you do the same or differently in the future?" The teacher provided students with time to think individually, then to pair up and share their thinking. After three minutes of student-to-student discourse *reflecting* about the choices, the teacher explained that they would continue with the project during the next class, and they may want to take into account what they just discussed in planning how they would complete the task the next day.

In a math class, students were exploring rational numbers. After a whole-class warm up, the teacher provided three choices for students. For each of the three choices,

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students also had the option of collaborating with a peer or working independently. For each choice, the teacher created a slide *framing* the positives and potential pitfalls of each choice. In going through each choice, the teacher emphasized certain aspects orally. For the first choice, students could move to stations around the room, each of which had a different problem with rational numbers. In *framing* this choice, the teacher explained that this choice might be a good match if students liked to get up and move and to work at their own pace. The second choice involved a series of rational numbers listed on a piece of paper. Students were to cut out each number and then arrange them from least to greatest. The teacher *framed* this choice by suggesting that if students liked to manipulate numbers and if they wanted to look at numbers in different forms that this might be a good choice for them. The teacher also referred to a similar ordering activity they had done the prior week to help students determine if this might be a good learning opportunity for them. For the third choice, students could work on computers with more practice about absolute value. To *frame* this choice, the teacher said, “If you feel like you could really benefit from some more practice with absolute value, this might be the best choice for you today.”

The teacher then provided students with one minute to think about the different choices and determine which one to pursue. After the one minute of silent reflection and *planning* expired, students moved to their choices. Students *worked* for a total of 30 minutes on their choices. Again, the teacher circulated among students asking and answering questions. Every five to seven minutes, the teacher would stop the class and point out different student approaches to each choice to provide additional information about how to *work* and successfully complete their choices.

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At the end of the 30 minutes, students picked up an exit ticket from the back table. This was a standard exit ticket that the teacher had been using since the mid-intervention observation and conference when the teacher determined a goal of increasing opportunities for *reflection*. The ticket read: “1. What activity did you choose to do? 2. Why did you choose this activity? 3. Do you think you chose the best option to help YOU learn? Explain why or why not. 4. In the future would you choose this same activity or a different one?”

The SI and second observer noted that in the eight of nine classes where all aspects of AC were present, all eight teachers were actively involved in working with students and providing coaching messages while students completed their choices. A high level of student engagement, purposeful student-to-student discourse, and on-task behavior were also prevalent.

### **Conclusion**

Quantitatively the results were impressive. The percentage of participants implementing all four phases of AC during the pretest was 0%. The percentage of participants implementing all four phases of AC during the posttest was 88.9%. In addition, 100% of participants implemented all four phases during either the mid- or the post-observation.

Qualitatively the results may be even more meaningful. As a result of the PD on AC, teachers observed more on-task, reflective, and committed students in their classrooms. There were decreases in behavior problems and increases in student ownership, discourse, and engagement. Participants developed a professional learning community and supported each other in trying new things. Based on these powerful

results, the AMS school leadership team decided to continue the PD about AC with all teachers in the building for at least the remainder of the school year.

### **Discussion**

While this intervention was only with nine teachers at one school, the changes in teacher practice were startling. Observed changes in teacher practice and student learning align with the research. When teachers were provided with PD that met their needs and the needs of their students, teacher practice changed. When students were provided with increased opportunities for autonomy and metacognition, teachers reported students were more engaged and on task and took more ownership of their learning, which may have been the effects of providing more positive stage-environment fit.

The PD as the vehicle for assisting participants in developing and delivering more lessons with more AC, was designed with the research in mind about effective PD. It endured over four months, incorporated time to explore and experiment with the new strategies, and fostered collaboration and sharing of effective practices through a PLC (Akiba, 2012; Birman et al., 2000; Jenson et al., 2002; Shanks et al, 2012).

Also important in PD leading to changes in teacher practice, the content aligned with teachers' perceived needs of their students (Akiba, 2012). This PD was designed specifically to deepen participant understanding of early adolescents' developmental needs and help them better respond to those needs. From the first activity, participants' beliefs about their students were honored with the first sorting activity. During this PD opportunity, participants identified their observations about the characteristics of middle school students, and then sorted those according to the research-based developmental needs of early adolescents. They then read research about metacognition and autonomy

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especially and how important those were to establishing a positive stage-environment fit for their students.

As mentioned, the quantitatively measured change in teacher practice was considerable, as no teachers (0%) demonstrated all phases of AC during the pretest, whereas eight out of nine (88.9%) of teachers demonstrated all phases of AC during the posttest. However, the qualitative data gathered from the teachers regarding their observations of the changes in instructional practices and their students speak more specifically to a better stage-environment fit for students. Participants consistently mentioned that students were more on-task, more engaged, and took more ownership of their learning. Students had more choices and autonomy in their learning and more opportunities to reflect on their own metacognitive development. Consequently, the learning environment was better suited to their developmental needs (Eccles & Midgley, 1989; Eccles et al, 1993). As developmental needs are one component of an individual's needs, these changes also supported Caplan's (1987) theory of person-environment fit, Vygotsky's (1978) sociocultural perspective on learning, and Gee's (2008) perspective on opportunity to learn. Because the stage-environment fit was more appropriate for early adolescent needs of autonomy and metacognition, opportunity for them to learn may have been increased.

### **Limitations, Delimitations, and Future Studies**

Limitations included the sample population size, as there were only nine core subject teachers at AMS and the fact that there was no way to have a separate control group within the study setting. While these limitations lessen causality and generalizability, other study design elements and drastic results support transferability



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(Yin, 2016). The quantitative and qualitative data are compelling and warrant further investigation. Therefore, it is recommended that similar studies be repeated and data be collected at other schools and in other settings.

Additionally, a delimitation was confining this study to the examination and effecting change in teacher practice. There was anecdotal evidence as reported by teachers that there were changes in student engagement, ownership, and motivation. Participants also reported improvement in homework completion, enhanced student collaboration, increased student confidence, and decreases in off-task behavior.

While powerful statements, these insights were gathered from teacher perception data. Future studies could collect student data to provide direct evidence as to the actual impact of increased AC in the classroom on students. Studies that replicated these PD efforts and then went further to explore and document changes in student behaviors, attitudes, and ultimately achievement, could provide additional evidence that increased AC in the classroom impacts student learning. Extending this study's findings in this way could persuade teachers, administrators, and school system leaders to implement PD policy changes for middle level educators. Similarly, the emerging college and university preparation programs designed for aspiring middle school teachers could become more effective from this and related research.

In a competitive global economy, where United States students score below average in math and only close to average in science and reading according to the 2015 Program for International Student Assessment (OECD, 2016), students can ill-afford setbacks in academic progress. Educational institutions owe it to our students and our society to take advantage of this and future research about creating a positive stage-

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environment fit for early adolescents in an effort to help students maintain a positive achievement trajectory throughout their school years. The results of this study indicate there is promise for both middle school teachers and students to eliminate the middle school mismatch, which could ultimately eliminate the middle school decline in student achievement.

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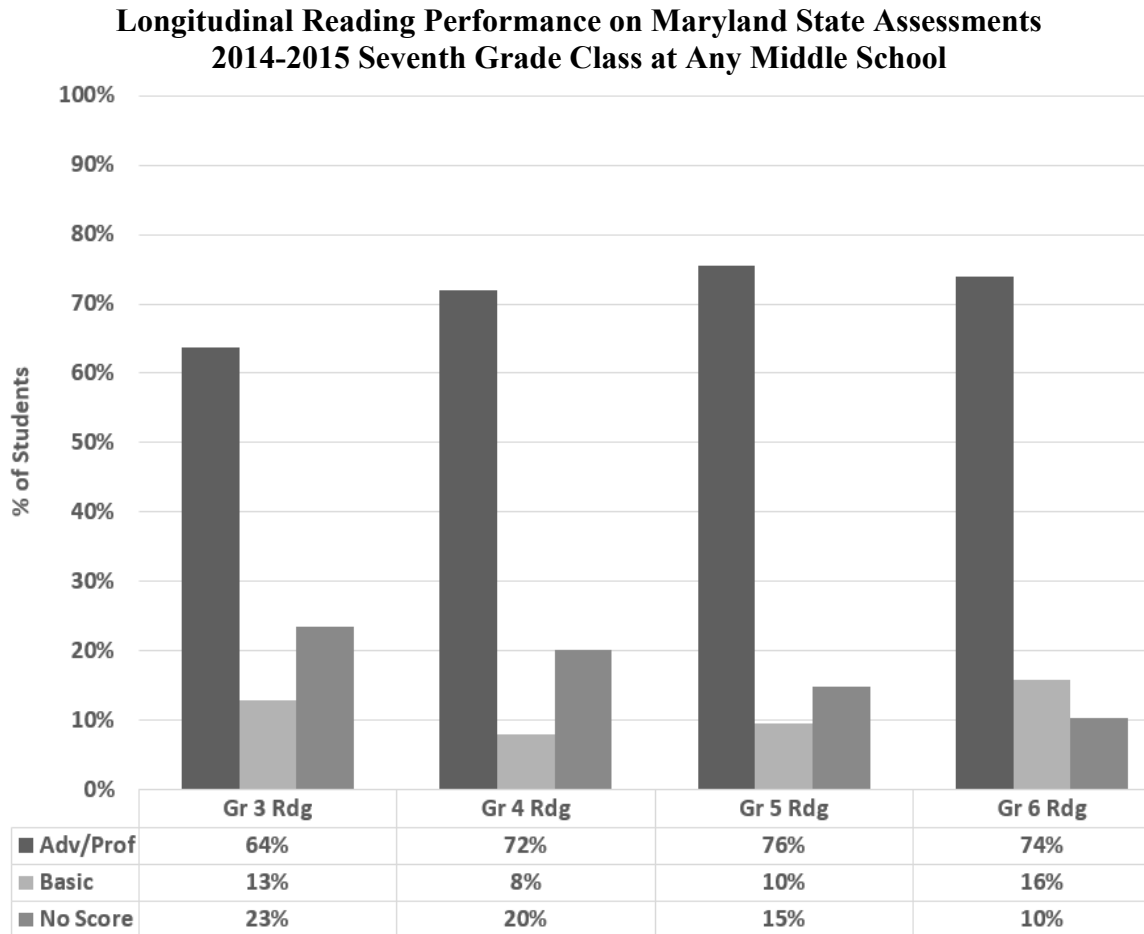
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Figures

Figure 1: MSA Reading Scores



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Figure 2. MSA Math Scores

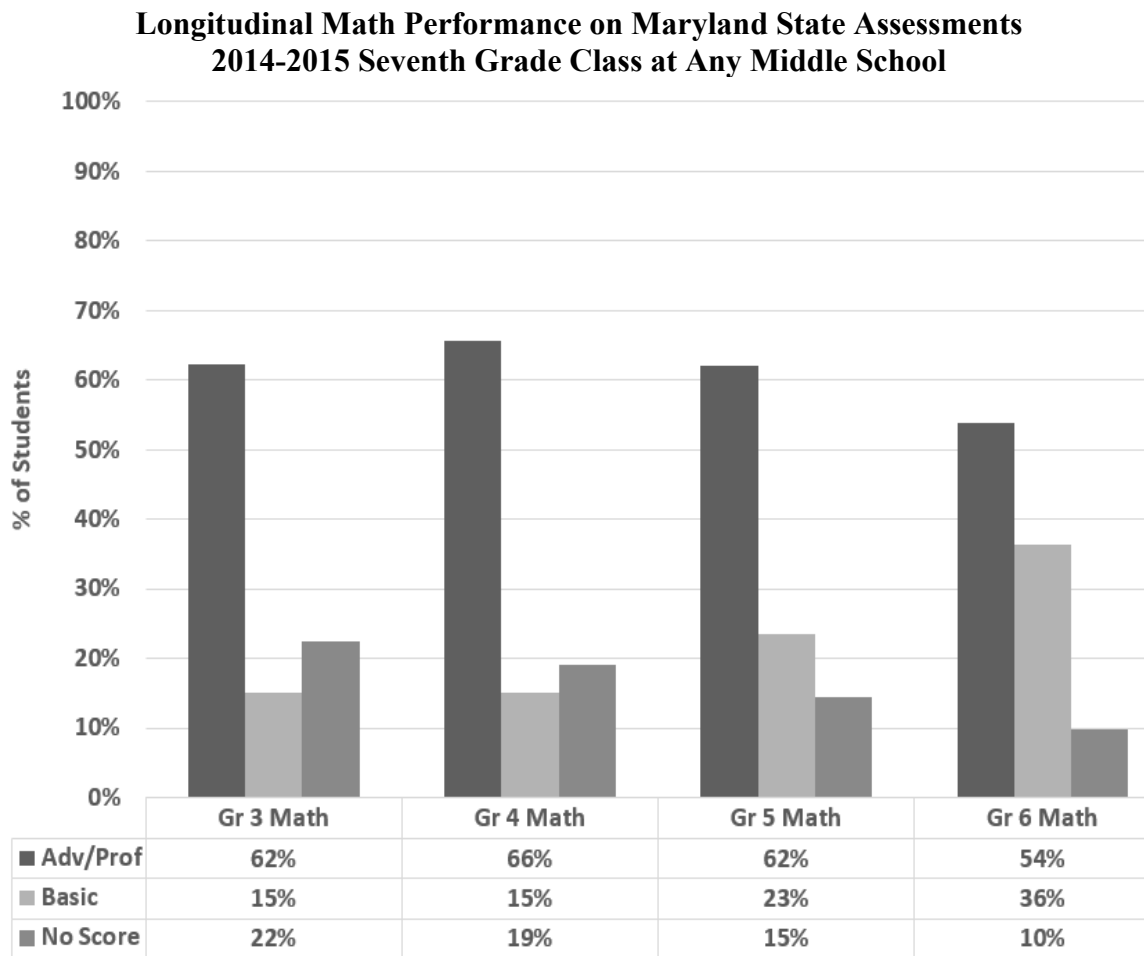


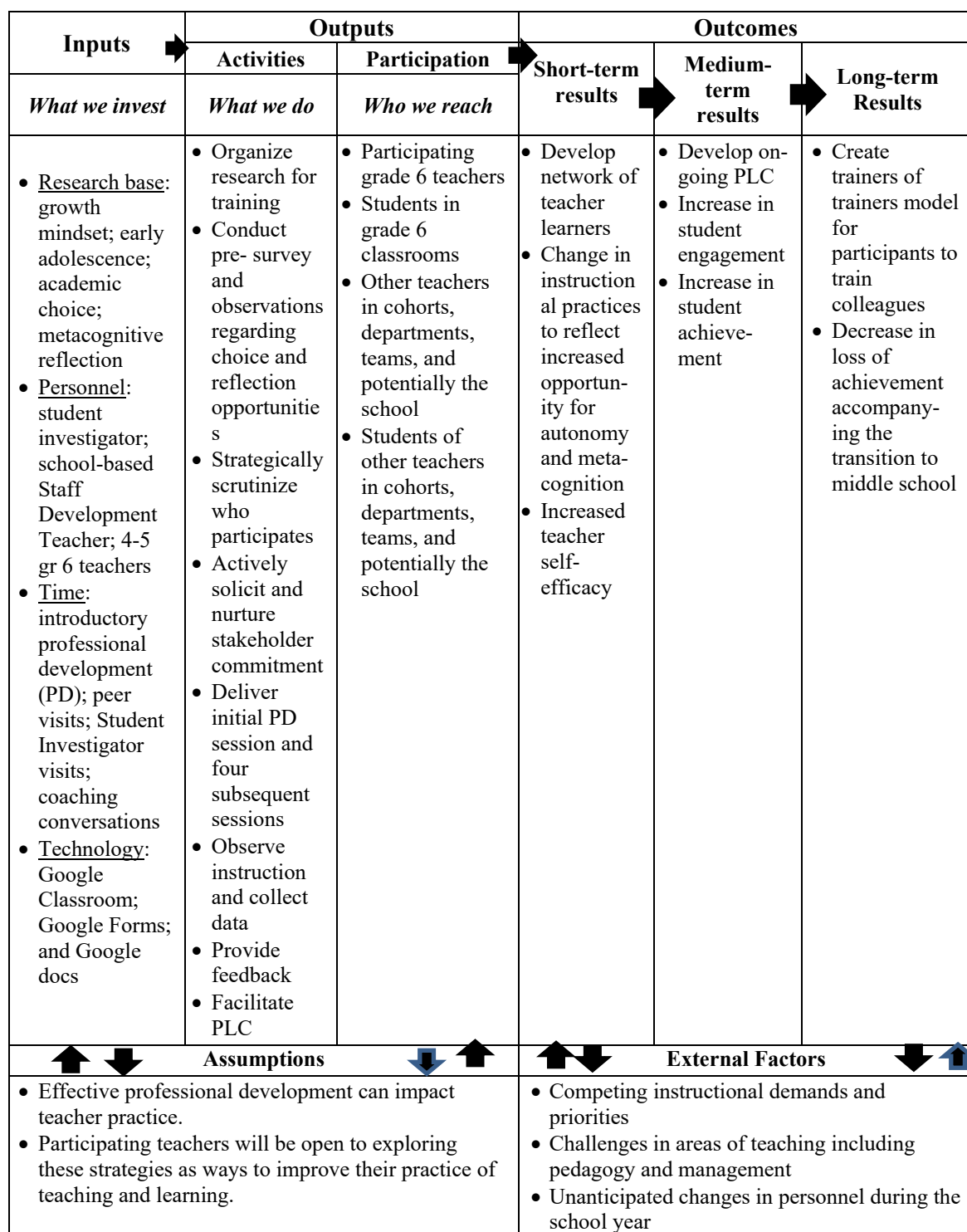
Figure 3. **Logic Model**

Figure 4. **Data Collection Matrix****Data Collection Matrix**

<b>Research Question:</b> In what ways can professional development about academic choice and reflection change teacher practice to promote a more positive stage-environment fit for early adolescents?				
<b>Data</b>	<b>Data Collection Tools</b>	<b>Frequency</b>	<b>Responsibility</b>	<b>Purpose and Planned Analysis</b>
Pre-intervention state  Control variable	Academic Choice Google Form	One time; September 2016	Student investigator; Outside observer	<ul style="list-style-type: none"> <li>quantitative analysis of which aspects of academic choice are evidenced in a classroom observation prior to the intervention</li> <li>serves as the pretest</li> </ul>
Attendance at PD sessions  Moderating Variable	Sign-in sheets at each PD session  Spreadsheet to monitor overall data	Four times, at each PD session	Participants; Student investigator	<ul style="list-style-type: none"> <li>analyzed to measure dosage and ensure that each participant actually receives all the PD content</li> <li>make-up sessions conducted as necessary</li> </ul>
Participant satisfaction  Moderating Variable	Google Form	Four times, after each PD session	Participants; Student investigator	<ul style="list-style-type: none"> <li>analyzed to measure PD quality, and participant responsiveness.</li> <li>monitor participant learning and satisfaction and inform future PD sessions</li> </ul>
Peer Visits  Mediating Variable	Peer Visit Reflection Form	One time between the November and December PD Sessions	Participants; Student Investigator	<ul style="list-style-type: none"> <li>serves as models for participants and incentives to plan academic choice lessons with all components</li> <li>participant recorded notes will be coded and analyzed to examine learning</li> </ul>
Mid-Intervention State	Academic Choice Google Form	One time for each	Student investigator; outside observer	<ul style="list-style-type: none"> <li>quantitative analysis of which aspects of academic choice are</li> </ul>

# ACADEMIC CHOICE TO IMPROVE MIDDLE SCHOOL TEACHING

Moderating Variable		participant during October or November		evidenced in a classroom observation after two PD sessions <ul style="list-style-type: none"> <li>provides content for coaching conversation</li> </ul>
Coaching Conversations Moderating Variable	Notes Action Items  Reflective Google Form	One time for each participant following mid-intervention observation	Participants; Student Investigator	<ul style="list-style-type: none"> <li>opportunity to provide individual coaching to each participant on next steps</li> <li>opportunity to collect additional qualitative data from participants</li> </ul>
Academic Choice Artifacts Mediating Variable	Evidence shared and posted in Google Classroom	At least four times each for each participant after each intervention	Participants: posting and sharing artifacts  Student investigator: managing and monitoring Google Classroom	<ul style="list-style-type: none"> <li>serves as vehicle to share examples with colleagues</li> <li>provides additional evidence of participant learning and changes in practice to be triangulated with other data sources</li> </ul>
Post-intervention state Independent Variable	Academic Choice Google Form	One time; December or January	Student investigator; Outside observer	<ul style="list-style-type: none"> <li>quantitative analysis of which aspects of academic choice are evidenced in a classroom observation after the intervention</li> <li>serves as the posttest</li> </ul>

## ACADEMIC CHOICE TO IMPROVE MIDDLE SCHOOL TEACHING

Figure 5. **Pre- and Post- Observation Findings**

### Pre-Intervention Observation Findings

Participant	Any Evidence of AC	Teacher Framing	Student Planning	Student Working				Student Reflection
				Con	Proc	Prod	Work	
1	N	N	N	N	N	N	N	N
2	Y	N	N	Y	N	N	Y	N
3	Y	N	N	Y	Y	Y	Y	N
4*	N	N	N	N	N	N	N	N
5	N	N	N	N	N	N	N	N
6*	Y	N	N	N	Y	Y	Y	N
7	Y	N	N	Y	N	N	Y	N
8*	N	N	N	N	N	N	N	N
9	N	N	N	N	N	N	N	N
TOTALS	4	0	0				4	0

### Post-Intervention Observation Findings

Participant	Any Evidence of AC	Teacher Framing	Student Planning	Student Working				Student Reflection
				Con	Proc	Prod	Work	
1	Y	Y	Y	Y	N	Y	Y	Y
2	Y	Y	Y	Y	Y	Y	Y	Y
3	Y	Y	Y	Y	Y	Y	Y	Y
4*	Y	Y	Y	Y	Y	Y	Y	Y
5	Y	Y	Y	Y	Y	Y	Y	Y
6*	Y	Y	Y	Y	Y	Y	Y	Y
7	N	N	N	N	N	N	N	N
8*	Y	Y	Y	Y	Y	Y	Y	Y
9	Y	Y	Y	Y	Y	Y	Y	Y
TOTALS	8	8	8				8	8

\* indicates participant was at AMS during the 2015-2016 school year and had participate in prior PD about AC

Note: The student working phase is delineated by the different types of choices students had, content, process, and/or product. The work column within that section indicates if the student working phase was actually present.



## ACADEMIC CHOICE TO IMPROVE MIDDLE SCHOOL TEACHING

Figure 6. **Session #1 Findings**

### Session #1 Outcome Attainment Data

Identify two early adolescent developmental needs that are met through AC (metacognition and autonomy)	
Met	Did Not Meet
8	1
88.9%	11.1%

Identify the four phases of AC (teacher framing; student planning, student working, student reflecting)	
Met	Did Not Meet
8	1
88.8%	11.1%

### Session #1 Artifact Data

Evidence of Experimentation with and Reflection on AC instruction			
Experimented	Strength Identified	Challenge Identified	Next Steps Identified
9	9	8	9
100%	100%	88.9%	100%

### Session #1 Participant Satisfaction Data

The processes used in the PD session were appropriate for achieving the outcomes			
Strongly Agree	Agree	Disagree	Strongly Disagree
6	3	0	0
66.7%	33.3%	0%	0%

The processes used today allowed me to participate fully in discussions and activities			
Strongly Agree	Agree	Disagree	Strongly Disagree
4	5	0	0
44.4%	55.6%	0%	0%

## ACADEMIC CHOICE TO IMPROVE MIDDLE SCHOOL TEACHING

Figure 7. **Session #2 Findings**

### Session #2 Outcome Attainment Data

Plan a lesson with all four components of AC	
Met	Did Not Meet
9	0
100%	0%

### Session #2 Artifact Data

Evidence in lesson plan for AC Components			
Teacher Framing	Student Planning	Student Working	Student Reflecting
9	9	9	9
100%	100%	100%	100%

Peer visit observations	
Noted High/Increased Student Engagement	Identified Next Steps in Practice
9	9
100%	100%

### Session #2 Participant Satisfaction Data

The processes used in the PD session were appropriate for achieving the outcomes			
Strongly Agree	Agree	Disagree	Strongly Disagree
3	6	1	0
33.3%	66.7%	11.1%	0%

The processes used today allowed me to participate fully in discussions and activities			
Strongly Agree	Agree	Disagree	Strongly Disagree
7	2	0	0
77.8%	22.2%	0%	0%

## ACADEMIC CHOICE TO IMPROVE MIDDLE SCHOOL TEACHING

Figure 8. **Session #3 Findings**

### Session #3 Outcome Attainment Data

Identify at least one bridge to overcoming a barrier to implementing AC lessons	
Met	Did Not Meet
9	0
100%	0%

### Session #3 Artifact Data

Barriers to bridges collaborative problem-solving about AC implementation			
Identified a Barrier	Received Potential Solution from Partner A	Received Alternative Potential Solution from Partner B	Developed a Solution to Implement
9	9	8	9
100%	100%	88.9%	100%

### Session #3 Participant Satisfaction Data

The processes used in the PD session were appropriate for achieving the outcomes			
Strongly Agree	Agree	Disagree	Strongly Disagree
5	4	0	0
55.6%	44.4%	0%	0%

The processes used today allowed me to participate fully in discussions and activities			
Strongly Agree	Agree	Disagree	Strongly Disagree
7	2	0	0
77.8%	22.2%	0%	0%

## ACADEMIC CHOICE TO IMPROVE MIDDLE SCHOOL TEACHING

Figure 9. **Session #4 Findings**

### Session #4 Outcome Attainment Data

Identify at least one impact on classroom instruction	
Met	Did Not Meet
9	0
100%	0%

Identify at least one impact on student learning	
Met	Did Not Meet
9	0
100%	0%

### Session #4 Artifact Data

Group One's categories and corresponding observations of the impact of AC on classroom instruction and student learning		
Classroom culture	Metacognition	Engagement
<ul style="list-style-type: none"> <li>increased collaboration</li> <li>more students demonstrating leadership skills</li> <li>students taking more initiative</li> <li>easier to manage students</li> <li>positive interactions</li> </ul>	<ul style="list-style-type: none"> <li>more student generated questioning</li> <li>increased student independence</li> <li>students finding their own strengths</li> <li>students taking pride in their work</li> </ul>	<ul style="list-style-type: none"> <li>higher levels of student-to-student discourse</li> <li>more buy-in</li> <li>students are requesting choices</li> <li>they learn more</li> <li>engaged and excited</li> <li>students are more engaged</li> </ul>

Group Two's categories and corresponding observations of the impact of AC on classroom instruction and student learning		
Ownership	Tenacity/Investment	Engagement
<ul style="list-style-type: none"> <li>self-advocacy</li> <li>increased task completion</li> </ul>	<ul style="list-style-type: none"> <li>tenacity</li> <li>students are more invested</li> <li>students want to complete their work</li> <li>students try different ways to achieve a goal</li> <li>students are willing to struggle to master a task</li> </ul>	<ul style="list-style-type: none"> <li>students are more engaged</li> <li>higher engagement</li> <li>students are more engaged in their work in class and at home</li> </ul>

## ACADEMIC CHOICE TO IMPROVE MIDDLE SCHOOL TEACHING

### Session #4 Participant Satisfaction Data

The processes used in the PD session were appropriate for achieving the outcomes			
Strongly Agree	Agree	Disagree	Strongly Disagree
6	3	0	0
66.7%	33.3%	0%	0%

The processes used today allowed me to participate fully in discussions and activities			
Strongly Agree	Agree	Disagree	Strongly Disagree
8	1	0	0
88.9%	11.1%	0%	0%

## ACADEMIC CHOICE TO IMPROVE MIDDLE SCHOOL TEACHING

Figure 10. **Mid-Observation Findings**

### Mid-Intervention Observation Findings

Participant	Any Evidence of AC	Teacher Framing	Student Planning	Student Working			Work	Student Reflection
				Con	Proc	Prod		
1	Y	Y	Y	Y	Y	Y	Y	Y
2	Y	Y	N	Y	Y	Y	Y	N
3	Y	N	N	Y	Y	Y	Y	N
4*	Y	Y	Y	N	Y	N	Y	Y
5	Y	N	Y	Y	Y	Y	Y	N
6*	Y	Y	N	Y	N	Y	Y	N
7	Y	N	N	Y	N	Y	Y	Y
8*	Y	Y	Y	Y	Y	Y	Y	Y
9	Y	Y	Y	Y	Y	Y	Y	N
TOTALS	9	6	5				9	4

Note: The student working phase is delineated by the different types of choices students had, content, process, and/or product. The work column within that section indicates if the student working phase was actually present.

Appendices

**Appendix A**

**Classroom Observation Form**

This form already existed as a Google form, and was used by the school since November 2015. Several of the questions have drop down menu options. Instructional leaders in the building use this tool as they visit teachers to collect data on the state of academic choice in the building.

**Any Magnet Middle School Learning Walk Data**

Did you see evidence of academic choice?

- Yes
- No

What type of evidence did you see (check all that apply)?

- Teacher framing academic choices
- Students planning academic choices
- Students working on academic choices in
  - content
  - process
  - product
- Students reflecting on academic choice

Comments:

**Appendix B**

**Peer Observation Capture Sheet**

<b>What I saw the teacher do to promote academic choice</b>	<b>What I saw the students do as a result</b>	<b>How I will change my practice as a result</b>
<b>General comments and/or questions:</b>		



**Appendix C**

Johns Hopkins University  
Homewood Institutional Review Board (HIRB)  
**Informed Consent Form**

Title: Professional Development for Middle School Teachers:  
The Power of Academic Choice in the Classroom to Improve Stage-  
Environment Fit for Early Adolescents  
PI: Dr. Henry Smith, Associate Professor, Johns Hopkins University  
SI: Ms. Kelli M. Phillips, Doctoral Student, Johns Hopkins University  
Date: August 23, 2016

**PURPOSE OF RESEARCH STUDY:**

The purpose of this research study is to examine the ways professional development about academic choice may change teacher practice to be more responsive to early adolescent developmental needs for autonomy and metacognition.

It is anticipated that approximately eight middle school teachers at Argyle Middle School will participate.

**PROCEDURES:**

This study will consist of:

- an initial 60-minute professional development session in September, 2016,
- classroom visits by the student investigator and an outside observer to collect pre-, mid-, and post- intervention data on the state of academic choice opportunities in each participant's class,
- an individual coaching session with the student investigator to debrief the mid-intervention classroom visit,
- the use of an on-line Google classroom to share plans, artifacts, and reflections
- structured time and opportunity to conduct peer visits to see other participants' implementing academic choice in their classes, and
- three additional 60-minute professional development sessions monthly in October, November, and December during pre-established team meeting times during the normal workday.

Participant Consent Form  
Page 1

Title: Professional Development for Middle School Teachers:  
The Power of Academic Choice in the Classroom to Improve Stage-  
Environment Fit for Early Adolescents  
PI: Dr. Henry Smith, Associate Professor, Johns Hopkins University  
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Date: August 23, 2016

Participants will also be asked to provide feedback regarding satisfaction and learning via Google Forms throughout the intervention.

Time required: All work should be able to be completed during the normal work day. All professional development opportunities will take place during pre-designated team meeting time. Time for planning lessons, sharing artifacts and reflections will be incorporated into those meetings. One 30-45 minute individual coaching session will be established between each participant and the student investigator after the mid-intervention class visit at the convenience of each participant.

**RISKS/DISCOMFORTS:**

There are no anticipated risks to participants.

**BENEFITS:**

Potential benefits to participants include an increased understanding of how to incorporate academic choice and the power providing academic choice to students has to respond to early adolescent needs of autonomy and metacognition. Participants will become part of a professional learning community with access to on-line forums for sharing artifacts, ideas, and reflections. In addition, is anticipated that creating more developmentally-responsive middle school classrooms may contribute to student engagement and motivation and ultimately to eliminating the decline in achievement when students transition to middle school.

**VOLUNTARY PARTICIPATION AND RIGHT TO WITHDRAW:**

Participation in this study is entirely voluntary. You may indicate your decision to participate by the signature statements at the bottom of this form. There will not be any penalty or any loss of benefit if you choose not to participate in this study. Further, there will be no penalty or loss of benefit if you decide to stop participating at any time. Should you decide to stop participating in this study, please contact Kelli Phillips via phone or email: (240) 426-3004, kelli\_m\_phillips@mcpsmd.org.

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**ALTERNATIVES TO PARTICIPATION:**

If you elect not to participate, you will still be included in the professional development sessions during pre-designated team meetings. However, you will not be part of the on-line professional community, nor will you participate in associated structured classroom visits, individual coaching sessions, or structured feedback and reflection opportunities.

**CONFIDENTIALITY:**

Any records, data, reports, or information that identify you or your participation in this survey will be kept completely confidential. The only people who may review the data are the principal investigator, student investigator, members of the Johns Hopkins University Homewood Institutional Review Board and officials from the Montgomery County Public Schools Office of Shared Accountability. All of these parties are responsible for ensuring that your decision to participate and your responses are completely confidential, and that the study is conducted properly.

Participants in the study will have access to each other's posts in Google Classroom, and will be aware of fellow participants due to participation in the professional development sessions. All survey and classroom observation data will be collected via Google Forms and will only be accessible to the principal investigator and the student investigator. Names will not be collected on any Google Forms. All forms and summaries generated by the forms will be for the exclusive use of the principal investigator and the student investigator. There will be no information that will identify you on this electronic survey or on any paper reports from the survey. All data will be maintained electronically in a password-protected computer file using research identification numbers only. Any paper reports or data will be kept in a locked office by the student investigator.

Three years after the completion of the study electronic records of the survey will be erased and all paper documents related to the survey will be shredded.

**COMPENSATION:**

You will receive light refreshments at each professional development opportunity.

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**IF YOU HAVE QUESTIONS OR CONCERNS:**

If there are any questions about this study, please contact Kelli Phillips via phone or email: (240) 426-3004, [kelli\\_m\\_phillips@mcpsmd.org](mailto:kelli_m_phillips@mcpsmd.org). If you have any concerns that you have not been treated fairly, or if you feel that any rights have been violated in any manner, please call the Homewood Institutional Review Board at Johns Hopkins University at (410) 516-6580.

**SIGNATURES**

**WHAT YOUR SIGNATURE MEANS:**

- Your signature below means that you understand the information in this consent form.
- Your signature also means that you agree to participate in the study.
- By signing this consent form, no legal rights are waived that you would otherwise have.

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**Participant's Name**

---

**Participant's Signature**

**Date**

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**Signature of Person Obtaining Consent  
(Investigator or HIRB-Approved Designee)**

**Date**

**Appendix D****Academic Choice Planning Template****Planning with a Lens on Academic Choice**

Teacher:

Cohort:

Date(s) to be taught:

Mastery Objective:			
<b>Think About...</b>	<b>Choice 1</b>	<b>Choice 2</b>	<b>Choice 3</b>
What is it?			
How will I frame it?			
How will students plan their choices?:			
What will students need to work on their choices?			
What will the product be?			
How will students reflect on the product?			
How will students reflect on their learning?			

## Appendix E

## Academic Choice Planning Example

Planning with a Lens on  
Academic Choice

Teacher: Ms. Amazing AC  
Teacher: Cohort: Math 6



<b>Mastery Objective:</b> Students will be able to apply place value to develop understanding of the standard algorithm for division.			
Think About...	Choice 1	Choice 2	Choice 3
<b>What is it?</b>	Work with me	<a href="#">Khan Academy Video and practice</a>	<a href="#">Error Analysis</a>
<b>How will I frame it?</b>	If you'd like to work with me, I'm going to model a problem with a think aloud strategy and have you look for patterns, and come up with the process as a group.	If you would prefer to work on your own, you can watch a series of Khan Academy videos at your own pace. You can pause them and go back, and you can do practice exercises.	If you have some familiarity with the standard algorithm for long division, you may want to work with a partner to find and analyze someone else's errors.
<b>How will students plan their choices?</b>	Give students some think time. Then have students go to different areas of the room. Have the error analysis sheets available and tools to select partners at one station. Have chromebooks at another, and have whiteboards and markers at another where students can sit with me. Be prepared for any number of students to pick any station.		
<b>What will students need to work</b>	White boards, markers, socks	Chromebooks	Error analysis sheets Pencils Means for selecting partners
<b>What will the product be?</b>	Three question exit card with one division problem and two reflection questions.		
<b>How will students reflect on the product?</b>	Question #2 on exit card: How does place value help you understand how to solve this problem with the standard algorithm?		
<b>How will students reflect on their learning?</b>	Question #3 on exit card: Reflect on your academic choice today. Write down one thing that worked well for you and one thing you will do the same or differently next time when you have a similar choice.		

CURRICULUM VITAE

Kelli M. Phillips

[Kelli\\_M\\_Phillips@mcpsmd.org](mailto:Kelli_M_Phillips@mcpsmd.org) – Rockville, MD

**EDUCATION**

**Ed.D. Entrepreneurial Leadership in Education - Conferral Expected August 2017**

Johns Hopkins University, Baltimore MD

Dissertation: *Professional Development for Middle School Teachers: The Power of Academic Choice in the Classroom to Improve Stage-Environment Fit for Early Adolescents*

**M.A. Education**

**December, 1991**

Marymount University, Arlington, VA

Action Research: *Enhancing Achievement through Interdisciplinary Instruction*

**B.A.**

**May, 1988**

Indiana University, Bloomington, IN

Honors College

Individualized Major in Public Relations

**PROFESSIONAL LICENSURE AND CERTIFICATION**

Maryland State Department of Education:

Advanced Professional Certificate – December, 1991

Research for Better Teaching:

In-District Instructor – May, 2016

**PROFESSIONAL EDUCATION EXPERIENCE**

**Research for Better Teaching/Montgomery County Public Schools/Fitchburg University**

**In-District Instructor (2015-Present)**

Studying Skillful Teaching 1

Course Description:

*A thirty-six hour course that examines the knowledge base on teaching in such a way as to cultivate collegiality and experimentation among participants. Teachers expand their repertoire of instructional strategies and apply new skills in support of cultural proficiency and student achievement.*

**Montgomery County Public Schools (1992-Present)**

Instructional Specialist, Center for Skillful Teaching and Leading (July 2016-Present)

Staff Development Teacher, Interdisciplinary Resource Teacher, Classroom Teacher of

English, Reading, and Mathematics, Argyle Middle School (July 2007-June 2010)

College Readiness Coordinator, Blair, Einstein, Northwood, & Kennedy High Schools (July 2007-June 2010)

Student Achievement Specialist, Maryvale Elementary School (July 2003-June 2007)

## ACADEMIC CHOICE TO IMPROVE MIDDLE SCHOOL TEACHING

Vertical Articulation Specialist, 5 Elementary Schools, 1 Middle School, & 1 High School, Rockville Cluster (July 2000-June 2003)

Center for the Highly Gifted Teacher, Grade 5, Lucy V. Barnsley and Cold Spring Elementary Schools (June 1997-July 2000)

Classroom Teacher, Grades 3 and 6, Forest Knolls Elementary School (March 1992-June 1997)

### Highlights of MCPS Skills and Accomplishments

**Collaborated with administration to lead staff and school improvement efforts.** Facilitated work of school leaders to design, implement, and monitor Baldrige-guided school improvement process and plans. Served as district's point person to support development and implementation of Student Learning Objectives (SLOs). Developed and coordinated implementation of professional development action plan to fulfil staff and faculty focus. Conducted informal observations and provided feedback to teachers on a regular basis. Organized coaching efforts to ensure all teachers had regular opportunities for constructive feedback to improve the practices of teaching and learning. Organized and managed mentoring program for teachers. Collected, analyzed, and organized systemic responses to data.

**Taught *Studying Skillful Teaching 1* and designed and delivered customized trainings** for teachers, leadership teams, schools, media specialists, counselors, and principals. Topics included: cultural competency and equity, classroom management, student learning objectives (SLOs), offering daily academic choices to empower students, differentiated instruction, rigor and higher level thinking for all students, coaching theory and practice for teacher leaders, school improvement processes, and supporting students with college readiness.

**Supported educational management at the school and district level.** Developed pilot program, Project SUCCESS (Student Unified Curriculum Combining English, Science, and Social Studies) as an innovative method to better transition students from elementary to middle school. Project SUCCESS is now in place at two middle schools in the county. Served as a specialist supporting college readiness for all students for four high schools and on the deputy superintendent's PSAT, SAT, ACT Project Team. Led four vertical teams across five elementary schools, one middle school, and one high school to align work around literacy, math, professional development, and social and emotional growth and well-being. Co-wrote and developed a guide for system and school leaders about processes for conducting walk-throughs in schools and another for secondary leaders to promote success on college admissions tests.

**Classroom teacher** for students in grades 3 and 5 in the elementary setting. Served as teacher for Center for the Highly Gifted Program for students in grade 5. Designed new curriculum and taught classes for struggling readers in 7<sup>th</sup> and 8<sup>th</sup> grades and taught math for sixth grade students at the middle school level. Taught



## ACADEMIC CHOICE TO IMPROVE MIDDLE SCHOOL TEACHING

compacted math for fifth grade students who came to the middle school from five different elementary schools. Developed curriculum, and co-taught a special intervention class for struggling readers at the high school level. Taught graduate level courses for aspiring teachers and teachers seeking to refine their practice through Johns Hopkins University and Fitchburg State University. Provided differentiated instruction and forged positive relationships to promote mastery in positive learning environments in all settings. Taught model lessons to demonstrate strong pedagogical practices for other teachers.

### **Johns Hopkins Graduate Teacher Certification Program**

#### **Instructor (2000-2001)**

Human Growth & Development & Diversity

Course Description:

*A three-credit graduate class that examines human growth and development in relation to learning and learning theory.*

### **Caroline County Public Schools**

#### **Consultant (1999-2000)**

Served as consultant as the county developed its first formal gifted and talented programs. Trained teachers on higher level thinking skills and the William and Mary literacy program for gifted learners. Collaborated with superintendent to approve new book lists and materials.

### **National Association of Elementary School Principals**

#### **Exhibit Hall Coordinator (1988-1991)**

Coordinated exhibit hall booths and presentations for NAESP national conferences in Atlanta, San Antonio, and Anaheim.

## **CONFERENCES**

*The Power of Academic Choice to Transform Middle School Classrooms.* Presented at the 2017 Universal Design for Learning Co-Teaching Academy (Gaithersburg, MD, 2017)

*Using Technology to Increase School-wide Participation and Provide Effective Feedback.* Presented at the Administration and Supervisory Meeting for MCPS principals and directors (Rockville, MD, 2015)

*Differentiated Professional Development.* Presented at the MCPS Staff Development Teachers Conference (Rockville, MD, 2012).

*Vertical Teams: Achieving New Heights.* Presented at the National Staff Development Council, (Boston, MA, 2003).

*Teaching the Highly Gifted Student.* Presented at the Maryland State Conference on Gifted & Talented Education (Ocean City, MD, 2000).

**PUBLICATIONS:**

Author, “Professional Development for Middle School Teachers: The Power of Academic Choice in the Classroom to Improve Stage-Environment Fit for Early Adolescents.” *Unpublished manuscript, Johns Hopkins University*, 2017  
Co-author, “Project Success Helps Students Make the Transition” *Association for Middle Level Education Magazine*, volume 2 (9), May 2015

**AWARDS AND HONORS:**

Maryland Educator Award of Excellence from Johns Hopkins, Center for Talented Youth  
Awarded *Washington Post* Grant in Education  
MCPS Superintendent’s A.B.C.D. (Above and Beyond the Call of Duty) Award  
Phi Beta Kappa and Golden Key honors societies

**BIOGRAPHY**

Kelli M. Phillips was born and raised in Bethesda, Maryland. The daughter of two teachers, she originally embarked on a career in public relations after completing an individualized major in the honors college at Indiana University. After graduation, she secured a job with the National Association of Elementary School Principals (NAESP), and realized she wanted to be closer to education, to the schools, and to the students. While working full time at NAESP, she went to school at night to complete her M.A. in Education at Marymount University. She began her teaching career in elementary school and later worked for the central office collaborating with high school leaders to help more students prepare for and get accepted to their colleges of choice. Her doctoral research was inspired after she was later recruited to be the staff development teacher at a suburban middle school. All of her professional efforts are grounded in improving the practices of teaching and learning, based on her belief that every child deserves an expert teacher.